

An Illustrated
History Of
British Guiana -
Primary Source
Edition

Bennett, George Hanneman



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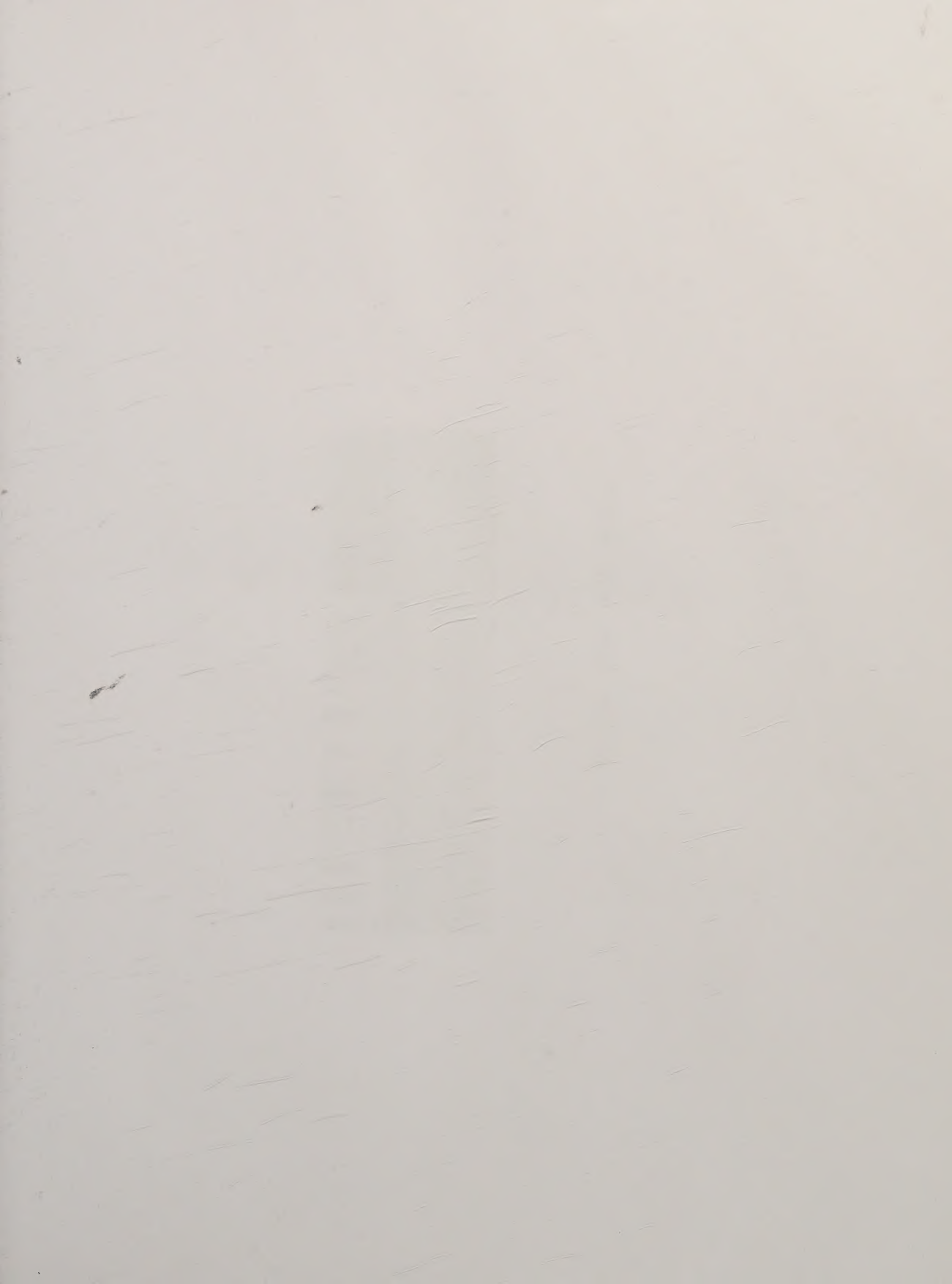
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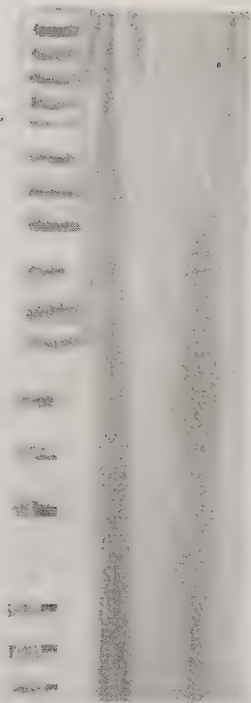
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1 Frontispiece—Guiana Public Buildings.

AN

ILLUSTRATED HISTORY

OF

BRITISH GUIANA,

COMPILED
FROM VARIOUS AUTHORITIES,

BY

WATERTON
FEDMAN
MONTGOMERY MARTIN

SCHOMBURGK
HANCOCK
BERNAU

LESLIE
FLETCHER
HARRISON

WOODS. NATURAL HISTORY—CATALOGUE OF CONTRIBUTIONS FROM
GUIANA TO THE LONDON INTERNATIONAL EXHIBITION OF 1862
COLONIAL OFFICE LIST, &c.

ILLUSTRATED WITH PICTURES BY ALICE

BY

GEORGE W. BENNETT.

GEORGETOWN, DEMERARA:

RICHARDSON AND CO.

PRINTED BY L. M'DERMOTT, "COLONIST" OFFICE, WATER-STREET

1866.

TO HIS EXCELLENCY
FRANCIS HINCKS, ESQ., C.B.,
Governor and Commander-in-Chief of British Guiana,

During whose administration of the Government, the Colony of
British Guiana has greatly flourished and prospered, and
has attained its present high position among the
dependencies of the British Crown.

This Volume is,

By permission,

Respectfully Inscribed,

By His Excellency's

Most Obedient Servant,

Geo. W. Bennett.

PREFACE.

IN presenting this volume to the notice of my fellow-colonists and the public, I desire to state that my original intention was simply to reproduce, in the form of an album, the illustrations and the letter-press of the beautiful and elegant work by the late Sir ROBERT SCHOMBURGK, entitled the "*Interior of Guiana*." Upon consideration, however, I thought that the book would prove more useful and interesting to the general reader, if select extracts from other authors and travellers were included, so as to comprehend, not only a description of the interior, but a general history of the colony, embracing an account of its discovery and colonization,—its progress and political changes (continued up to the present time), also, to notice its geographical position, boundaries, climate, geology, natural productions, etc. How far my humble efforts have succeeded in accomplishing this object, the reader must decide. In noticing the natural productions of the colony, it is not attempted to give a scientific classification, or a strict adherence to generic names, in describing the various orders and divisions of the Animal and Vegetable Kingdoms, a preference being given to ordinary names, and such as are in common use. The authorities to whom I am indebted and from whose writings I have chiefly compiled the present work, are —*Humboldt, Illhouse, Hancock, Waterton, Montgomery Martin, Stedman, Schomburgk, Bernau, Dalton, Wood's Natural History, The Catalogue of Contributions from British Guiana to the London International Exhibition of 1862, the Colonial Office List, etc.*

From the popular writings of the talented SCHOMBURGK, the interesting "*Wanderings*" of the eccentric WATERTON, and the valuable and comprehensive "*History of the Colony*" by Dr DALTON, I have made extensive quotations, these works affording together, the fullest information we possess on the general history of this important province.

It may be urged as a plea for undertaking to publish this history of British Guiana, that at the present time, the writings of the above authors are scarce, being mostly out of print. Notwithstanding the many defects and deficiencies in the general arrangement of this compilation (for which the reader's kind consideration is solicited), I am hopeful that my humble endeavours to produce a useful and entertaining volume, have not been altogether unsuccessful.

With regard to the illustrations, I may mention, that they are mostly

copies reproduced from other works, but with some original sketches from nature.

A perusal of these pages will, I trust, convince the reader that British Guiana is not only a sugar-producing colony, or, in vulgar *parlance*, a land of mud, but that it possesses immense treasures and resources, requiring only the application of capital and industry, to become available for the use and benefit of mankind. The portion of the colony which is at present occupied by colonists extends little more than a few miles from the sea; and the coast-lands alone are cultivated. The traveller, to appreciate the amazing grandeur of the natural scenery of Guiana, with its mountains, forests, falls, and cataracts, must penetrate the interior, where he will discover—

“Rocks rich with gems, and mountains bright with mines,
That on the high equator ridgy rise;
Where many a bursting stream, auriferous plays;—
Majestic woods of every vigorous green,
Stage above stage high waving o’er the hills.”

G.W.B.

GEORGETOWN, DEMERARA, *October*, 1866.

CONTENTS

CHAPTER I

GENERAL HISTORY—INTRODUCTION—GEOGRAPHICAL POSITION OF GUIANA—ITS EXTENT, BOUNDARIES, AND DIVISIONS—DISCOVERY BY COLUMBUS—SPANISH AUTHORITY ESTABLISHED—PORTUGUESE AND OTHER ADVENTURERS—SIR WALTER RALEIGH'S EXPEDITION—THE ELDO-RADO—THE POMEROON SETTLED BY THE DUTCH IN 1580—FORMATION OF A FACTORY—PRIVILEGES GIVEN TO TRADERS BY THE STATES GENERAL OF HOLLAND—KIK-OVER-ALL AT THE JUNCTION OF THE CUYUNI AND MASSARUNI OCCUPIED BY THE DUTCH—BANKS OF THE BERBICE COLONISED—ESSEQUIBO TAKEN BY THE ENGLISH AND BERBICE BY THE FRENCH—RETURNED TO THE DUTCH—PLANTATIONS FORMED ON THE DEMERARA—NEGRO INSURRECTION IN BERBICE—COURTS OF POLICY AND OF CIVIL AND CRIMINAL JUSTICE ON THE ISLAND BONSELEN, 20 MILES UP THE DEMERARA RIVER—REMOVED TO STABROEK NOW CALLED GEORGETOWN—THE COLONISTS OF ESSEQUIBO AND DEMERARA PLACED UNDER THE PROTECTION OF GREAT BRITAIN—RESTORED TO THE DUTCH IN 1802—AGAIN TAKEN POSSESSION, OF BY THE ENGLISH—INSURRECTION IN 1823—COLONIES OF DEMERARA, ESSEQUIBO, AND BERBICE UNITED AND CALLED BRITISH GUIANA IN 1831—THE CONSTITUTION AND FORM OF GOVERNMENT OF BRITISH GUIANA—REVENUE AND EXPENDITURE—IMPORTS AND EXPORTS, POPULATION, &c

PAGE 1

CHAPTER II

CLIMATE.—MEAN TEMPERATURE—WET AND DRY SEASONS—EARTHQUAKES—FALL OF RAIN—EPIDEMICS—TRANSPARENCY OF THE ATMOSPHERE—HEALTH OF THE COLONY COMPARED WITH OTHER COUNTRIES.

PAGE 28

CHAPTER III.

GEOLOGY AND SOIL—DELTA OF THE ESSEQUIBO—GRANITIC ROCKS—COMPOSITION OF THE COAST LANDS—ARTESIAN WELLS—FORESTS OF COURIDA—AMAZING FERTILITY OF THE SOIL—PEGAS LANDS—OCHRES, IRON, MICA AND PRECIOUS METALS FOUND—MINING ATTEMPTS BY THE DUTCH—MOUNTAIN OF SOLID GRANITE—VEINS OF QUARTZ—WHITE CLAY—ROCK CRYSTAL—RED AGATE—CONORO MOUNTAINS—FERTILE SAVANNAS.

PAGE 30

CHAPTER IV.

MOUNTAINS, RIVERS, CREEKS, AND CATARACTS.—PHYSICAL ASPECT—MOUNTAINS—FALLS—CATARACTS—THE RIVERS ESSEQUIBO, MASSARUNI, CUYUNI, DEMERARA, BERBICE, AND CORENTYN—PRINCIPAL CREEKS. PAGE 34

CHAPTER V.

THE INTERIOR OF GUIANA.—LUXURIANT VEGETATION—DENSE FORESTS—VICTORIA REGIA LILY—THE ELIZABETHA REGIA TREE—THE COMUTI OR TAQUIARI ROCK ON THE ESSEQUIBO—INDIAN PICTURE WRITING—ATARAIPU, THE DEVIL'S ROCK—PIRARA—PURE-PIAPA, A REMARKABLE BASALTIC COLUMN—RORAINA—PUREMAMA, THE GREAT FALL OF THE RIVER PARIMA—JUNCTION OF THE KUNDANAMA WITH THE PARAMU—ESMERALDA ON THE ORINOCO—FORT SAN GABRIEL—THE GREAT CATARACTS OF THE RIVER CORENTYN—WANARE-WONO-TOBO, OR GENERAL SIR CARMICHAEL SMYTH'S CATARACT—ITABRU AND CHRISTMAS CATARACT ON THE RIVER BERBICE—SHOOTING THE RAPIDS AND FALL—ITS DANGERS. PAGE 41

CHAPTER VI.

THE INHABITANTS OF BRITISH GUIANA.—THE ABORIGINES OR INDIAN TRIBES—THEIR ORIGIN—ARRAWAKS—WARROWS—CARIBS—ACCAWAIS—MACUSIS—ARECUNAS—WAPISIANAS—ATORAIS—TARUMAS—VOYAWAIS, AND OTHER TRIBES—PERSONAL DESCRIPTION—TATOOING AND PAINTING OF THEIR BODIES, DRESS, AND ORNAMENTS—FORM OF HUTS—HUNTING GROUNDS—BLOWPIPE—FORM OF POTTERY USED—THEIR CHIEFS—CUSTOM AT THE BIRTH OF A CHILD—BORING THE LIPS, EARS, AND NOSE—EXPERTNESS WITH THE USE OF THE BOW AND ARROW—ENDURANCE OF PAIN—CRUELITIES TO CHILDREN BEFORE MARRIAGE—POLYCAMY ALLOWED—MODE OF PREPARING FOOD—PIWARRY AND CASSIRI DRINK—MODE OF PREPARATION—HOBHIT, OR BANDMASTER—WARROU DANCE—FUNERAL CEREMONIES—OBEDIENT WIDOWS PUNISHED—IDEAS OF RELIGION—MANNERS, CUSTOMS, AND SUPERSTITIONS OF THE VARIOUS TRIBES—CANNIBAL INDIANS—INDIAN VOCABULARY. EUROPEANS—CREOLES—PORTUGUESE—AFRICANS—COOLIES—CHINESE—STATEMENT FROM THE CENSUS OF 1861—EXTRACTS FROM IMMIGRATION RETURNS. PAGE 84

CHAPTER VII.

THE ANIMAL KINGDOM.—*Principal Quadrupeds—Reptiles and Insects.* THE TAPIR—MANATEE—WILD HOG—WATER HAAS—COATIMONDE—DEER—JAGUAR—TIGER CAT—ANT BEAR—SLOTH—POTTO-KINKAJOU—OPOSSUM—ARMADILLO—ACOURI—LABBA—CRAB DOG—BUCK DOG—HOWLING BAROON—MONKEYS—ALLIGATOR—GUANA—COMMON, SERPENTINE AND SALEMFFENTA LIZARDS—CHAMELEON—WOODSLAVE—SCORPION—CENTIPEDE—RATTLE SNAKE—BUSHMASTER—LABARRI—CAMOUDI—COKAL, WATER, AND PARROT, SNAKES—GUANA SNAKE—

TURTLES—CRABS—FROGS AND TOADS—VAMPIRE BAT—KNIFE GRINDER
LANTERN CARRIER—FIRE FLY—SAND FLIES—BEIL-ROUGL—MASON BIRD
—MARABUTA—HARBACK—BEETLE—GRASSHOPPERS—WALKING
LEAF—TARANTULA OR BUSH SPIDER—CHIGOE—ANTS—GROE-GROE
WORM—BUTTERFLIES

PAGE 113

CHAPTER VIII

THE ANIMAL KINGDOM, (CONTINUED)—*Birds*—EAGLE—FALCONS—
KING OF THE VULTURES—HAWK—CARRION CROW—OWL—PARROTS AND
PARROQUETS—LOVE BIRDS—MACAW—TOUCAN—KINKADI—PIRL BIRD
—WALLABAH—BELL BIRD—SAKIS—THRUSH—LAZY BIRD—COCK OF
THE ROCK—SWALLOWS—GOAT SUCKER—MOCKING BIRD—TROUBLE
—RICE BIRD—JEIBOURI—JAWARACIRI—HUMMING BIRD—HOCTOU—
BOCLORA—CUA—OLD WITCH OR JUMBI BIRD—WOODPECKERS—
BUTCHER BIRD—CUCKOOS—MAAM—POWINE—MAROUBI—DOURAGUARA
HANNAQUA—STINKING BIRD—SUN BIRD—TRUMPETER—TIGER BIRD
—PIGEONS—GUALDINS—SNOW WHITE EGRETTE—HERI—JABIRU—
SPOONBILL—CURRY-CURRIS—WATER HEN—DARTERS—VICISSY AND
WILD DUCKS, ETC

PAGE 163

CHAPTER IX

THE ANIMAL KINGDOM—(CONCLUDED)—*Fishes*—CANOES—CORIALS
AND METHODS OF CAPTURING FISH BY THE INDIAN TRIBES—LAW-LAW—
DAWALA—BISHAW—PACOMA—GILBAGRE—CARTARAC AND MOROCOTO
PACI—PIRAI—SUN FISH—HAIMIRA—MULLI—HASSAR—FLOUNDER
ELLURIC ELL—YACUA—SNAPPER—STING RAY—JEW FISH—SNOOK
—SAW FISH—SNAKE FISH—SHARK, ETC

PAGE 193

CHAPTER X

THE VEGETABLE KINGDOM.—(*Principal Hardwoods*)—MORA—
GREENHEART—PURPLEHEART—KAKARALLI—DITERMA—HOUBABALLI
WALLABA—BULLY TREE—SIRUBALLI—DUCALIBALLI—ITABALLI—SU-
RADANI—MORABALLI—CUCURUBALLI—BROWN AND WHITE CEDAR—
CUAMARA OR TONKA—SOUARI—WASHIBA—LOCUST TREE—HAWABALLI
—COUTABALLI—SIMARUBA—MONKEY POT TREE—ITIKIRIBOURA-BALLI
CRABWOOD—EBONY—CANDLEWOOD—LITTER OR SNAKEWOOD—IRON-
WOOD—PADDAIWOOD—YARI YARI—BLACK CINNAMON—SILK COTTON
TREE—HERI HERI—LIGNUM VITE

PAGE 216

CHAPTER XI.

THE VEGETABLE KINGDOM.—(CONCLUDED).—CABBAGE PALM—COCO-
NUT—MANICOLE—EFA—COARITE—TOOROO—ACUYURU PALM—AMARA
—TROOLIE—MANGROVE—BREADFRUIT—BREADNUT—SNAKENUT—
COCOA—COFEE—COTTON—TOBACCO—RICE—SUGAR CANE—PLANTAIN
BANANA—ORANGE—LIME—SHADDOCK—FORBIDDEN FRUIT—SATA-
BILLO—SEMITOO—MARMALADE TREE—AVOGADA PEAR—GIAVA—
TAMARIND TREE—CASHEW NUT—WILD NUTMEG—MANGO—PINE APPLE
—STAR APPLE—POMEROSE—SOUR SOP—MELON—GINGER—VANILLA—
ARNATTO—INDIGO—LOGWOOD—LAVA—HAY HAY OR COW TREE—
—INDIA RUBBER—SANDBOX—IPLCACUANHA—PHYSIC NUT—PAW—

QUASSIA — BALSAM COPAVI — LAUREL OIL TREE — HIARY — WORALI —
SILK GRASS — MAHOE — CASSAVA — ARROW ROOT — INDIAN AND GUINEA
CORN — YAMS — SWEET POTATOES — OCHROES — SORREL — PEPPERS, ETC.

PAGE 226

CHAPTER XII.

MISCELLANEOUS.—AN ACCOUNT OF THE GOVERNOR'S VISIT TO THE
TUMULUS AT WARRAMURI, RIO MORUCA, WITH PARTICULARS RESPECTING
THE EXCAVATION—NAMES OF ALL THE COMMANDERS AND GOVERNORS OF
THE COLONY — THE LEGISLATURE—PUBLIC OFFICES AND JUDICIAL
ESTABLISHMENTS—RELIGIOUS DENOMINATIONS—CORPORATE BODIES AND
PUBLIC INSTITUTIONS—ESTIMATE AND WAYS AND MEANS FOR 1866
—LIST OF PLANTATIONS OF THE COLONY AND WHERE SITUATED—NAMES
AND SALARIES OF PUBLIC OFFICERS.

PAGE 247

LIST OF THE ILLUSTRATIONS.

- 1 Frontispiece—Guiana Public Buildings**
- 2 View of the British Guiana Gold Company's Diggings on the Cuyuni**
- 3 View from the Georgetown Lighthouse—looking east**
- 4 " " " " " south-east**
- 5 " " " " " south**
- 6 Cricketers on the Georgetown Parade Ground**
- 7 Junction of the Rivers Essequibo and Massaruni and Raow Island**
- 8 View of Water-street from the Reading Rooms Tower—looking north**
- 9 " " " " Looking south**
- 10 The Comuti or Tagulara Rock**
- 11 The Ataraipu, or, the Devil's Rock**
- 12 Pirara and Lake Annuen, the site of the El Dorado**
- 13 Pure-Piapa—A Remarkable Basaltic Column**
- 14 Roraima a Range of Sandstone Mountains**
- 15 Purumama, the great Cataract of the River Parima**
- 16 Junction of the Kundanama with the Paramu**
- 17 Esmeraldo on the Orinoco**
- 18 Fort San Gabriel**
- 19 Itabru and Christmas Cataracts on the River Berbice**
- 20 Group of Indian Women eating Cassava and Pepper Pot**
- 21 Wato-Ticaba a Wapsiana Village**
- 22 Indian Sorcerer**
- 23 Belle of the Wapisiana's**
- 24 Indian Snake Catcher**
- 25 Caribi Village—Anai—near the River Rupununi**
- 26 The Macquari Dance**
- 27 The Tapir**
- 28 The Manati or Sea Cow**
- 29 Group of Monkeys**
- 30 Waterton's Ride upon an Essequibo Alligator**
- 31 A Negro Skinning a Camondi Snake**
- 32 The Jaguar**
- 33 The Rattlesnake**
- 34 The Crested Eagle**
- 35 The Bell Bird**
- 36 The Cork of the Rock**
- 37 The Jabiru**
- 38 Manner of Capturing the Electric Eel**
- 39 The Essequibo Rapids**

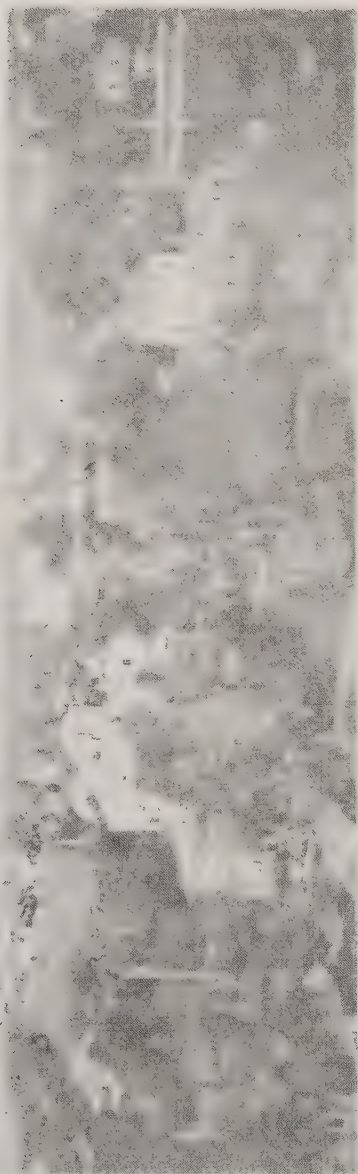
Portraits of Governors of the Colony

**Reception of the Governor by the Indians at Warramuri
Mission, Rio Moruca**

The Tumulus at Warramuri

**View of the Quartz Rock at the British Guiana Gold Com-
pany's Diggings on the Rio Cuyuni**

Arms, Weapons and Furniture of the Indians



3 *View from the Georgetown* *use—looking east.*

ILLUSTRATED HISTORY

OF

BRITISH GUIANA.

CHAPTER I.

GENERAL HISTORY.—Introduction—Geographical Position of Guiana—Its Extent, Boundaries, and Divisions—Discovery by Columbus—Spanish Authority Established—Portuguese and other Adventurers—Sir Walter Raleigh's Expedition—The Eldorado—The Pomeroon settled by the Dutch in 1580—Formation of a Factory—Privileges given to Traders by the States General of Holland—Kyle-over-all at the junction of the Cuyuni and Massaruni occupied by the Dutch—Banks of the Berbice Colonised—Essequibo taken by the English and Berbice by the French—Returned to the Dutch—Plantations formed on the Demerara—Negro Insurrection in Berbice—Courts of Policy and of Civil and Criminal Justice on the Island Borselen, 20 miles up the Demerara River—Removed to Stabroek now called Georgetown—The Colonies of Essequibo and Demerara placed under the protection of Great Britain—Restored to the Dutch in 1802—Again taken possession, of by the English—Insurrection in 1823—Colonies of Demerara, Essequibo, and Berbice united and called British Guiana in 1831—The constitution and form of Government of British Guiana—Revenue and Expenditure—Imports and Exports, Population, &c.

No part of inter-tropical America surpasses British Guiana in the beauty or variety of its natural scenery. Only those who have explored its interior, ascended its noble rivers, and penetrated its dense forests can form an adequate idea of the fertility and profuseness of tropical vegetation that there exists. ² 'It would appear as if the productive powers of nature, on receding from the poles, had collected themselves in their greatest strength near the equator, spreading their gifts with open hand, rendering every scene more imposing and majestic, and manifesting the abundant fertility of the soil. Gigantic trees raise their lofty crowns to a height unknown in the European forests, and display the greatest contrasts in the form and appearance of their foliage. Lianas cling to their trunks, interlace their wide-spreading branches, and having reached their summit, with aerial roots descend again towards the ground, and appear like the cordage of a ship. Clusters of palm-trees, of all vegetable forms the most imposing, rise in grandeur above the surrounding mass, waving their pinion-like leaves in the soft breeze. Nature, as if not satisfied with the soil allotted to her, richly decorates the trunks and limbs of trees, the stones and rocks; even the surface of the water is covered with a carpet of plants interspersed by magnificent flowers. Nothing can give a better idea of the luxuriance and richness of vegetation in Guiana, than the splendid *Victoria Regia*, the most beautiful specimen of the Flora of the Western Hemisphere. The calm of the surrounding atmosphere, where frequently not a breath of wind agitates the foliage, not a cloud veils the azure vault

‘of heaven, contrasts strongly with the hum of animated nature. The Colibri, with its metallic lustre, passes rapidly from blossom to blossom, sipping the nectar of fragrant flowers, or sporting with the dew-drops which glitter on their petals. The ancient forest of noble trees re-echoes with the notes of feathered songsters. The plumage of the splendid Macaws and Parrots, perched on boughs, perhaps illumined by the beams of a setting sun, richly mingles with the brilliant and bright green foliage. Night approaches, and displays the firmament with all the southern constellations; the musical notes of birds give place to the chirping voices of crickets, the sounds of the tree-frog, lizards, and reptiles. Thousands of phosphorescent insects flutter among the leaves, emitting a light, which, if it does not illuminate, tends to increase the characteristic features of a tropical night, and to realize that idea which imagination sketches when impressed with the most splendid descriptions in the Arabian tales.’

* ‘The name of “Guiana” is given to that portion of the continent of South America, which lies between 8 deg. 40 min. North and 3 deg. 30 min. South; and 50 deg. and 68 deg. 30 min. West, which area has been calculated to contain 690,000 square miles; the coast line extends from the mouth of the River Orinoco to that of the River Amazon. It is divided into

1. Venezuelan Guiana, lying on both sides of the Orinoco and extending S. and S.W. to the Rio Negro and the Brazilian settlements. Its north-eastern boundary is at a point near the mouth of the River Barima, which empties itself at the confluence of the Orinoco.
2. British Guiana, extending from the Venezuelan line of division to the River Corentyn, having an area of 76,000 square miles.
3. Dutch Guiana, or Surinam, extending from the River Corentyn to the River Marawini in 54 deg. West long.
4. French Guiana, more commonly known as Cayenne, from the Island on which the capital stands, extending from the River Marawini to near Cape North.
5. Brazilian Guiana, extending from the southern boundaries of French, Dutch, British, and part of Venezuelan Guiana, to the Rivers Amazon and Negro.

The peculiarity of the hydrographic system of this vast territory is well worthy of note, for the River Orinoco sends a tributary stream to the River Negro, which flows into the Amazon, thus completing the circuit of water communication—in other words, to adopt the illustration employed by Sir ROBERT SCHOMBURGK, a person getting into a canoe at Paramaribo, the capital of Dutch Guiana, might, by coasting to the West and ascending the Orinoco, as far as the Cassiquiere, reach the River Negro, thence follow the Amazon to its mouth and return to Paramaribo by the coast of Cayenne, without the necessity of quitting his canoe. But the wonderful facilities possessed by this region for inland navigation do not end here—for, with a little trouble it might be extended to Santa Fè de Bogotá, and even,

* Cat. con. from E. Guiana to Len. Lx. 18...

extraordinary as it may seem, to the Pacific Ocean on the West, and to Buenos Ayres on the South. The River Napo offers communication with Quito: the Ucayali, with Cuzco; and the Huellaga, with Lima.'

² 'The discovery of Guiana is by some Authors attributed to COLUMBUS in 1498; others pretend the honour belongs to VASCO NUNEZ, who landed on the coast of Guiana in 1501. It is likewise stated that the discovery of Guiana was accomplished by DIEGO DE ORDAS, of the Kingdom of Leon, in the year 1531.'⁴ 'There is good reason, however, to believe that COLUMBUS himself first discovered, or at least made known, the land of Guiana; for in August, 1498, in his third voyage, he made the island of Trinidad, and encountered much difficulty in the mouth of the river Orinoco. "This river rolls towards the ocean such a vast body of water, and rushes into it with such impetuous force, that when it meets the tide, which on that coast rises to an uncommon height, their collision occasions a swell and agitation of the waves no less surprising than formidable. In this conflict the irresistible torrent of the river so far prevails, that it freshens the ocean many leagues with its flood."* COLUMBUS, having escaped the difficulty, "justly concluded that such a vast body of water as this river contained could not be supplied by any island, but must flow through a country of immense extent, and of consequence that he was now arrived at that continent which it had long been the object of his wishes to discover."† He accordingly sailed to the west, and landed on the continent in several places.

In the following year (1499), ALONZO DE OJEDA, a gallant and active officer, who had accompanied COLUMBUS in his second voyage, attended also by the famous AMERIGO VESPUTI, a Florentine gentleman, who had the undeserved honour of giving a name to the world discovered by another, set out for a voyage of discovery in four ships, provided by the merchants of Seville. Availing themselves of the journal and charts of COLUMBUS in his second voyage, they succeeded in reaching the eastern coast of South America, and are supposed to have made the land of Surinam after a voyage of twenty-four days. They ran along the coast of the Gulf of Paria, passing several large rivers—amongst others, the rivers Essequibo and Orinoco. They saw no natives until their arrival at Trinidad, where, after trading with them, they stood to the west, and proceeded as far as Cape de Vela, ranging along a considerable extent of coast.

Not long after, VINCENT JANEZ PINXON, a companion of COLUMBUS in his first voyage, sailed from Patos with four ships, January 13th, 1500, and made the land of Santa Maria de la Consolacion, or Cape St. Augustine, on the eastern angle of South America: he discovered the mighty river of the Amazons, or river Maranon, and landed on the coast at its mouth. From thence he sailed onwards, passing the rivers of Guiana as far as the river Orinoco, where it is supposed by some that he also landed. He afterwards proceeded to Hispaniola and the Bahamas. The Spaniards, according to an old writer,‡ on ascending the several rivers, were astonished at their size and peculiarities. On exploring the countries in the neighbourhood of the Orinoco, they received information of a territory far in the

* SCHOMBURGK.

† DALRY.

‡ Robertson's America, book ii. page 151.

† Ibid.

‡ Herrera.

"interior, which abounded in gold and emeralds, and of a salt-water lake, called *Parima*; thus leaving no doubt that so early as the time I have mentioned an acquaintance had been made with some of the tribes belonging to Guiana, among whom a tradition of his visit was known to have existed. A few years later another Spaniard received similar information on the opposite part of the coast.

Although the discovery of the different portions of America succeeded each other so rapidly, it was not until about ten years after COLUMBUS had made his first successful voyage, that the Spaniards practically attempted to form settlements on the main land. Unsupported by the crown of Spain, and at the sole expense of a few private individuals, this enterprising object was effected, chiefly through the famous ALONZO DE OJEDA, who had acquired considerable reputation and wealth in some voyages of discovery; and who was assisted by another Spaniard, DIEGO DE NICUESSA, a successful adventurer. Titles and patents (but nothing else) were granted by FERDINAND, and about 1509 two governments were established on the continent; one extending from the Cape de Vela to the Gulf of Darien, and the other from this gulf to Cape Gracias à Dias, from which settlements parties were sent to explore the inland districts. The first government was given to OJEDA, the second to NICUESSA. Much formality and time were wasted in prescribing the mode by which possession should be taken. They were to expound to the natives the principal articles of the Christian Faith; to acquaint them with the powers of the Pope; to inform them of the grant which that formidable prince had made of their country to the King of Spain, and to insist upon their embracing the new religion and submitting to the Spanish authority. In default of the fulfilment of these conditions they were to be punished with fire and the sword, and their wives and families were to be reduced to servitude. As a matter of course, such arguments being rather new to the independent Indian, and somewhat too subtle for their uncultivated understandings, caused considerable confusion and opposition. Force being employed by the Spaniards when they found arguments fail, the insulted Indian, roused to a sense of his danger, replied to both by *poisoned arrows* (another proof that the natives of Guiana were concerned in these occurrences), and effectually annihilated their invaders. The Spaniards, prevented from escaping by the loss of their ships, perished within a year in the most miserable manner. A few survivors, headed by VASCO NUNES DE BILBOA and FRANCISCO PIZARRO, formed a feeble colony at Santa Maria de Antigua, on the Gulf of Darien. Such was the first receptions given to Europeans in America by the simple aborigines of the interior.

The confused accounts which had been given to the Spaniards in the year 1500, about a rich city abounding in gold, silver, and precious stones, situated on the borders of the lake Parima, within the precincts of Guiana, inflamed the adventurous spirit of the age, and led to numerous enterprises, undertaken in the hope of discovering this famous regions. Thus early were the cupidity and the credulity of the Spaniards excited with regard to an ideal city, with its golden palaces, and streets paved

⁴ "with precious stones, reflecting their gorgeous beauty in the translucent waters of the Parima. Thus early was this *El Dorado** of the west, this supposed land of surpassing loveliness and wealth, held up as the greatest object of the Spanish conqueror's ambition. Mexico had been overrun, Peru had been conquered, but still the avarice of the invader had not been satiated, and El Dorado, the highest prize in the lottery of adventure, remained yet to be drawn. Hence ensued the romantic and spirited exploits, of which the following are instances.

A governor had been sent out by FERDINAND, King of Spain, and was to reside in the then capital of the Guiana del Dorado, viz., Trinidad, an island on its coast.

In the year 1530, DON DIEGO DE ORDÁZ, the governor of Quito, and one of the captains of Cortes, although living upon the opposite side of the continent, sent some of his people to explore Guiana. They had to pass high mountains and barren plains, and from the difficulty of the journey, and the lack of provisions, were obliged to return. According to the account of RALEIGH, it would appear that one DON MARTINES was an officer under DIEGO DE ORDÁZ, and got into a considerable scrape.

"For it chanced that while ORDÁZ, with his army, rested at the fort of Morriquito (situated some 300 miles within the land, upon the great Orinoco), and which ORDÁZ was either the first or second that attempted Guiana, by some negligence, the whole store of powder provided for the service was set on fire, and MARTINES, having the chief charge, was condemned by the general, ORDÁZ, to be executed forthwith. MARTINES being much favoured by the soldiers, had all the means possible procured for his life, but it could not be obtained in any other sort than this, that he should be set in a canoe alone, without any victuals, only with his arms, and so turned loose in the great river." This MARTINES afterwards, who had the honour of christening the city of Manao by the name of El Dorado, escaped to Trinidad, and from thence to Juan de Puerto Rico, where remaining a long time waiting for a passage into Spain, he died.

DON DIEGO subsequently returned to Spain, and procured letters patent from the Emperor CHARLES V., which secured to him all the land he should discover from Cape de la Vela, 300 miles to the east. Still intent on the discovery of the El Dorado, and whilst cruising near the mouth of the river Amazons, he captured some Indians who had precious stones resembling emeralds in their possession. Deluded by his prisoners into the belief that higher up this river there was a land abounding in similar productions and rich in gold, he proceeded, in 1531, with his force, consisting of several ships and about 400 men, up this mighty river; but dismayed at the loss of one of his ships, and many of his men, and harassed by the strong currents and vexatious calms, he abandoned his

⁴ DICTION.

* The term El Dorado was not originally applied to any particular region, but rather to an individual. According to Father Gumilla, the fable had its origin on the coast of Carthagena and Santa Martha, whence it passed to Bogota. A rumour prevailed through those regions that the sovereign prince of a country which abounded in gold, when he appeared in public, had his body sprinkled over with gold-dust; hence arose the expression of El Dorado, the gilded, or golden, which was subsequently applied to a supposed rich country. Others, however, derive the term from a religious practice among the sect of Bochica, or Idacanzas, whose chief priest stuck gold-dust upon his face and hands before he performed sacrifice.

object, and sailed for Paria, on the Orinoco, where he found a fort that had been erected by the governor of the Guianas, DON PALAQUE. He took possession of this fort (although commanded by an officer of the governor's, JUAN GONCALVES), under pretext of the letter patent granted to him by the emperor, and ascended the river Orinoco,* and although suffering from the want of provisions, and from the mosquitoes, bats, and other plagues, he arrived at the dwelling of the cassique Viapari (the Indian name of the river Orinoco), where, being well received, he remained for some time. On attempting to make further progress up the river, he lost his largest ship, and was obliged in consequence to follow the banks of the stream, with about 200 men, and forty horses. On his route, he met only a few Carribbean fishermen. Having once more re-embarked his troops, he proceeded up the Orinoco, about 300 miles from its mouth, when he met the large tributary stream, the Meta, which, rushing down over the rocks in the form of a huge cataract, joins the Orinoco in this singular manner. Being now obliged to retrace his steps without having succeeded in discovering the coveted El Dorado, he descended the river, to about forty-five miles from its mouth, where, on its *eastern* bank, he built a town, which he called *St. Thomas of Guiana*.

Thus had DIEGO DE ORDAS the honour of first erecting a town within the precincts of the Guianas. He soon afterwards returned to Spain, and died, either on his passage or shortly after his arrival. In the course of these expeditions he had transported out of Spain 1000 soldiers. Situated at the confluence of the Caroni and the Orinoco, this town was never of much importance; it consisted of about 150 houses, and the inhabitants planted tobacco, and, encouraged by the fruitful soil and fine pasturage, endeavoured to grow provisions, and to breed cattle and horses, which they procured from Comana; but a few years after, the English and Dutch, jealous of the progress of the Spaniards, disturbed them in their possessions. It was not, however, until the year 1570, that these disturbances commenced, and in 1629, on the 30th November, but according to others, on the 11th December, a Dutch force of nine ships, and some sloops under Admiral PATER, took the town, which they plundered and burned. Some of the inhabitants escaped to Comana, and others repairing about seven miles further up the river, on the same side, erected another town.†

Previously to these occurrences, however, the governor of Paria sent his lieutenant, ALFONSO DE HERRERA, with 200 soldiers, and five vessels, to St. Thomas of Guiana in 1533. They had several skirmishes with the Carribbean Indians, and killed many of them. Proceeding further, they arrived at the Meta cataract, already alluded to, and, undaunted by its roaring waters, they carried their vessels over the fall, and succeeded in making the ascent of the river. Their success was not unaccompanied by losses and disasters. HERRERA and his troops were constantly harassed by the natives, who killed many of them with their poisoned arrows. HERRERA himself was severely wounded, and became mad in consequence.

* DALTON.

* Sir W. Raleigh says he reached the river Orinoco by the river Viapari; but this was the name given to the Orinoco by the Spanish and Indians.

† St. Thomé de Nueva Guayana, the present City of Bolivar.

⁴ During his temporary insanity, ALVARO DE ORDAS took command of the expedition, and considering discretion the better part of valour, returned to Paria, which he reached in 1536. In the same year another expedition was undertaken by ANTONIO SIBENNO, with whom HERRERA and AUGUSTUS DELGADO were associated in the conquest of Trinidad against BAWCUNAR, a famous king of that place. SIBENNO passed by MARACAPANA with 500 chosen men to discover El Dorado. In this journey he is said to have got much gold, and taken many Indian prisoners, whom he manacled in irons, several of them dying on the way. Even in their deaths these Indians became formidable, for the tigers that came to feast on their dead bodies fell upon the Spaniards, who with great difficulty defended themselves from their attacks. SIBENNO having died, was buried within the precincts of the empire, near the head of the river Tinados, and most of his people perished.*

Doomed to disappointment by water, in search of the El Dorado, an expedition by land was attempted by GONZALO PIZARRO, who had been appointed governor of Quito, by his brother, the famous FRANCISCO PIZARRO, who had deposed BENALCAZAN. Assembling together about 100 Spaniards, nearly half of whom were horsemen, and 400 Indians, to carry their provisions, which they had in abundance, GONZALO PIZARRO, a man of great courage and ambition, left the capital of Peru (Quito), in the year 1540 (others say 1544), to explore the golden land. Passing over the lofty summits of the Andes, where the cold was severely felt, they descended, after incredible hardships, into the low country, where an almost uninhabited territory, and torrents of rain, awaited them. Advancing for many weeks through dense forests, occasional mountains, and swampy marshes, assailed by numerous insects, serpents, and some tribes of Indians; and suffering from the failure of their provisions, they still persevered, with the prospect of the glittering prize before them, until they reached the banks of the river Napo, a tributary stream of the Amazon, which, in 1536, had been already discovered by GONZALVES DIAS DE PINEDA. Aware of the difficulties by land, they contrived to build a bark for the purpose of seeking provisions, and facilitating their exploration of the country. The command of this expedition was entrusted to FRANCISCO ORELLANA, the officer next in rank to PIZARRO. He had with him about fifty soldiers, and receiving his orders from PIZARRO, was directed not to venture far, but to keep within reach of his party; notwithstanding these strict instructions, he boldly entered the river, and, carried away by the current, was soon out of sight. Fearlessly following the stream, this enterprising, but unprincipled officer, reached at length the broader waters of the Amazon, where he held on his course towards the ocean. Struck, as well he might be, by its fruitful banks, he occasionally made excursions on land, where he procured provisions, either by traffic, or by force, from the native tribes. It was whilst combating with some of these, that he observed, with surprise, that the women fought equally with the men, giving rise to the fable of the land of Amazons, for whatever might have been the case in his day, nothing particularly warlike on the part of the female popu-

⁴ DALRYMPLE.

* Raleigh.

* lation of that part of the globe has ever since been noticed. It was here, also, that his cupidity was excited by the sight of some precious stones, resembling emeralds, which the Indians declared abounded higher up the river. Having named the river Orellana, after himself (a name which, though attempted to be retained by some, has given place to the equally unmerited one of Amazon), he, after incredible dangers, launched his adventurous bark into the ocean, and returned to Spain about the year 1545, where he pretended that he had discovered nations so rich, that the roofs of their temples were covered with plates of gold, and dwelt with enthusiasm on his wars with the female republics of the Amazon, and his long voyage, 1550 miles, up the river.

Meanwhile, GONZALO PIZARRO, unwilling to believe in the treachery of ORELLANA, proceeded along the banks of the Napo as far as its junction with the Amazon, where a rendezvous had been arranged; but receiving no account of the expedition, he tracked the banks about fifty leagues further on. Here, to his dismay, he discovered an officer who had been left to perish in the desert, because he had remonstrated against the perfidy of ORELLANA. The danger of his situation was now revealed to him, but with undaunted courage, he retraced his steps. Distant about 1200 miles from Quito, he had to lead his dispirited and disappointed followers back through the difficult road they had traversed. Their hardships were beyond description; emaciated, worn out with hunger and fatigue, all the Indians, and the greater number of the Spaniards, perished in that fatal campaign—only eighty returned to Quito, and these in the most deplorable state, naked and famished. Thus, in the year 1542, ended one of the most famous expeditions in search of an ideal city, mocking the sun with golden mansions and silver waters.

Nor were the Spaniards the only nation credulous enough to believe in the romantic tale which had now been circulated all over Europe. It would appear that the French, who were at this time (1550) in the habit of sending ships to the Brazilian coast, to trade with the Indians in pepper, dye, wood, and other native productions, actually undertook several voyages to discover the El Dorado, but with the same results. The cause of their failure is given in a very quaint manner by Sir WALTER RALEIGH, who, describing the French as taking the course of the Amazon in search of the golden land, declared that they were mistaken in the road, "*den rechten Weg niet genomen hadden.*"*

In one of these voyages, about the year 1555, they rescued from the Indians a Dutch traveller, "*HANSTADEN,*" of Homburg, in Hesse, (who wrote an account of his travels), and were told by him that he had been a prisoner for about five years among the Indian tribes.

Upon another occasion, one PEDRO DE OSEA, a knight of Navarre, attempted to explore Guiana. Starting from Peru with 400 soldiers, he built his brigantines upon a river called Orinoco, which riseth to the southward of Quito, and is very large. This PEDRO DE OSEA had among his troops a Biscayan called AGIRI, a man meanly born, and who bore no other office

* DALTON.

* Hartsink, p. 158.

“than that of sergeant, or alferéz. This man induced the soldiers, who were worn with travail, and consumed with famine, to mutiny, and having murdered OSEA, and his wife Lady ANES, “who forsook not her lord in all his travels unto death,” he took the whole charge and command to himself, with the purpose not only of making himself Emperor of Guiana, but also of Peru, and of all that side of the West Indies. His party amounted to about 700 soldiers; but not being able to reach Guiana by the Amazon, they were “enforced to disembogue at the mouth of the said Amazon, thence he coasted the land till he arrived at Margarita, to the north of Nonpatar, which is, at this day, called Puerto de Tyranno, for that he there slew DON JUAN DE VILLA ANDREDA, governor of Margarita.” AGUI put to the sword all those who opposed him, and took with him certain ceremonies and other desperate companions; with these he went to Cumana, and there slew the governor, and otherwise behaved in the same manner as at Margarita. He afterwards proceeded to the Comceas, but was slain in the kingdom of Nuevo Reyno.

The following expeditions were also undertaken about this period. A Spaniard, JUAN CORTESO, arrived at the river of Amazons, or Orellana, with 300 men, and marched into the country; but neither himself nor his men ever returned again to tell the tale of their adventures.

GASPAR DE SILVA, with his two brothers, departed from Teneriffe, accompanied by 200 men, to assist DIEGO DE ORTAS. They sought El Dorado by the river of the Amazons; but after staying there a short time, proceeded to Trinidad, where they all died.

JUAN GONSALVES set sail from Trinidad to discover Guiana; he trusted more to the faith of his guides than to the number of his men. He found the territory of Guiana, so far as he entered, to be populous, plentiful in provisions, and rich in gold.

PHILIP DE VUEN and PEDRO DE LIMPIAS were leaders in another expedition into Guiana; the latter was slain by an Indian cassique, named POUINA.

JERONIMO DE ORTOL, with 150 soldiers, failed in an attempt to reach Guiana by sea. He was carried by the current to the coast of Paria, and settled about St. Miguel; after suffering great hardships, and his substance having been all spent, he died at St. Domingo.

PEDRO DE SILVA, a Portuguese of the family of RIGOMES DE SILVA, in favour with the King of Spain, was sent with the fleet to explore Guiana, and failed also in his object. He entered the Amazons, but was attacked by the natives, and utterly overthrown; of his whole army only a few escaped, and of these but two returned to their native country.

A certain friar, Father SALA once made an excursion into the provinces of Guiana, taking with him only one companion, and some Indian guides. He returned with good intelligence, and is said to have brought with him eagles, idols, and other jewels of gold, in the year 1560. On a second visit to the country he was slain by the Indians.

An attempt to reach Guiana was also made by PEDRO HERNANDES DE SERPA, who landed at Cumana, and took his journey by land towards Orinoco; but before he arrived at the borders of the river, he was attacked

by a tribe of Indians, the Wikiri, and so completely routed, that, out of 300 soldiers, besides horsemen, Indians, and negroes, only eighteen returned to give an account of their leader's failure.

Another famous Spaniard, DON GONSALVES CENUNCO DE CASSADA, sought the country by the river Papamuna, and effected his return, after a fruitless journey, with much difficulty and cost. It was at his instigation that the gigantic expedition of DON ANTONIO DE BERREJO was undertaken, which the latter declared cost him 300,000 ducats.

Afterwards DIEGO DE VARGAS, and his son DON JUAN, undertook a similar enterprise, but were slain by the Indians at their first setting out.

CACERES attempted the exploration of Guiana from Nuevo Reyno de Granada, but came no nearer to it than Matachines, which bordered upon the kingdom of Granada, where he remained and peopled that territory.

It was also attempted by ALONSO DE HERRERA upon two different occasions. He endured great misery, but never entered one league into the country. He sought it by Viapari, or Amara, and was at last slain by a tribe of Indians, called Xaguas.

AUGUSTINE DELGADO explored the country to the southward of Cunanawogotto, with fifty-three footmen and three horsemen. The wars then existing between the Indians of the vale and those of the mountains assisted him in his object. He advanced until he met with an Indian cassique, named GARAMENTEL, who received him with much kindness, and gave him some rich jewels of gold, six scanty pages, ten young slaves, and three beautiful nymphs, who bore the names of the three provinces from whence they had been sent to Garamental. Their names were GUAXEA, POLOQUATE, and MARGUARATA. These provinces were reputed to be very healthy, and to possess a remarkable influence in producing fair women. The Spaniards afterwards requitted the manifold courtesies they had received, by absconding with all the gold that they could obtain, and seizing the Indians as prisoners, whom they conveyed in irons to Cubagua, where they sold them as slaves. DELGADO was afterwards shot in the eye by an Indian, and died in consequence of the wound. DIEGO DE LOSADA succeeded in his brother's place. He had many new followers, all of whom, in the end, wasted themselves in mutinies; those that survived returned afterwards to Cubagua.

REYOSO undertook an expedition, but having endured innumerable troubles "in the discomfort of his mind gave it over, and was buried in Hispaniola."

The Dutch, although in the habit of sending ships for the purposes of trade, which cruised along the coast from the river Amazon to the Orinoco, do not appear to have seriously entertained any scheme for seeking this land of promise. Sedate, calculating, and pilingmatic, they resisted the infatuation, and addressed themselves to the real and practical advantages the country presented to them.

In the year 1580, some vessels being sent from the province of Zealand to carry on the rude system of barter then practised, some of the persons concerned in the expedition established themselves near the river Pomeroon, where they formed a settlement which they called New Zealand, while

⁴ Others of the party formed similar settlements on the river Essequibo and at the mouth of the Abary or Wyabari Creek, where there was an Indian village called Nibie.

Other expeditions followed, but pre-eminent among the early explorers was the gifted but unfortunate Sir WALTER RALEIGH, who, after sending expeditions to the northern continent of America, and founding the colony of Virginia, was sent to the West Indies in command of a fleet of fifteen large ships to harass the Spaniards, with whom the English were then at war. That part of his enterprise, however, does not concern our narrative.

Sir WALTER RALEIGH, in his retirement, "having had many years since knowledge by relation of that mighty, rich, and beautiful empire of Guiana, and of that great and golden city which the Spaniards call El Dorado, and the natives Manoa," contemplated a voyage to this country, and on Thursday, February 6th, 1595, set sail in his own ship, accompanied by a small bark of Captain Cross's, besides a small gallego, and arrived at Trinidad on March 22, casting anchor at Point Cariapan, which the Spaniards called Punto de Gallo, situated in 8 deg., or thereabout. After having explored a great part of the island of Trinidad, he attacked St. Joseph, the capital, captured the Governor Berrejo, and set fire to it, at the instigation of the Indians, who had been most cruelly ill-treated by the Spaniards. Being reinforced by Captain George Gurnoun and Captain Kermis, RALEIGH proceeded to Guiana; but the distance (according to report, 600 miles,) being greater than he had anticipated, he concealed the fact from the knowledge of the company, who otherwise would never have been induced to attempt the exploration. "In the bottom of an old gallego, which I caused to be fashioned like a galley, and in one barge, two wherries, and a ship's boat, we carried 100 persons, and their victuals for a month, being all driven to lie in the rain and weather, in the open air, in the burning sun, and upon the boards, and to dress our meat, and to carry all manner of furniture in them; wherewith they were so pestered and unsavoury, that what with victuals, being most fish, with the wet clothes of so many men thrust together, and the heat of the sun, I will undertake there was never any person in England that could be found more unsavoury and loathsome, especially to myself, who had for many years before been dieted and cared for in sort far different." Being obliged to return from many causes, Sir WALTER RALEIGH enters into a full account of his travels and of the country, declaring "that whatsoever prince shall possess it, that prince shall be lord of more gold, and of a more beautiful empire, and of more cities and people, than either the King of Spain or the Great Turk"—a singular prophecy, and in part fulfilled.

RALEIGH, having listened to the long account given of Guiana by Don ANTONIO BERREJO, resolved to make a trial to discover it, although urgently dissuaded by the Spaniard, who was hitherto unaware of RALEIGH's object in coming thither. On the 22nd of May, after having been surrounded with difficulties in the neighbourhood of the Orinoco, as above noticed, he discovered some Indians, who made him acquainted with the country of Guiana. Having provided a vessel that drew very little water, he explored

"the coast, and discovered several rivers. He saw birds of all colors, "carnation crimson, orange, tawny, purple, green, and other sorts, both simple and mixed." After innumerable dangers in ascending some of these wild and hitherto unexplored rivers, he discovered on the fifteenth day the distant mountains of Guiana. On his route he fell in with several tribes of Indians, with whom he entered into friendly relations, accompanied them to their several towns. Having arrived at the river Caroli, he marched overland to view the strange waterfalls, and ascended the hills in the neighbourhood to see the adjacent country. There he heard of a great silver-mine. The following is RALEIGH's description of the scene :

"I never saw a more beautiful country, nor more lively prospects : hills so raised here and there over the valleys, the river winding into divers branches, the plains adjoining without bush or stubble ; all fair green grass, the ground of hard sand, easy to march on either for horse or foot ; the deer crossing in every path, the birds toward the evening singing on every tree with a thousand several tunes, cranes and herons of white, crimson, and carnation, perching on the river's side, the air fresh with a gentle easterly wind, and every stone that we stooped to take up promised either gold or silver by its complexion."

Some of these stones were believed by the Spaniards at Caraccas to be "el madre del oro," and they affirmed that the mine was further in the ground. On the left of the river Caroli dwelt a tribe of Indians, called Iwarrawakesi (enemies to the Epuremie), and adjoining a great lake named Cassipa, reported about forty miles broad, dwelt other tribes, called Cassapagotos, Eparagotos, and Arrawagotos. Beyond Caroli was another river, called Arvi, and next it two other rivers, Atoien and Caora, on which latter inhabited the people called Ewaipanoma, "*whose heads appear not above their shoulders*," which fable, indeed, was generally asserted, and was partly credited by RALEIGH, who states that "such a nation was written of by MANDEVILLE many years ago."

To the west of Caroli was met with another river, the Casero, "falling into the Orinoco, and larger than any in Europe. * * * The winter and summer in these regions, as touching cold and heat, differ not, neither do the trees ever sensibly lose their leaves, but have always fruit either ripe or green, and most of them both blossoms, leaves, ripe fruit, and green at one time." To the north of Caroli was the river Cari, beyond it the river Limó, and between these a nation of cannibals, "in whose chief town, called Aemmacaris, is a continual market of women, who were bought by the Arwaens for three or four hatchets a-piece, and sold by them to the West Indies. To the west of Limó were the rivers Pao, Caturi, Voari, and Capuri, a branch of the Meta; and mention is also made of several other rivers and provinces inland."

RALEIGH next proceeded to trace the Orinoco toward the sea. He described it as being navigable for ships for nearly 1000 miles, and for smaller vessels nearly 2000 miles, which at the present day is known to be incorrect. The winter or wet season having set in, he departed toward

"the east," for no half day passed but the river began to rage and overflow very fearfully, and the rains came down in terrible showers and gusts in great abundance." Raleigh having arrived at the fort of Monequiro, sent for an old Indian, Tora-wari, and to him he gave further information about the country. This old chief dissuaded him from attempting the city of Manao for many reasons, relating at the same time marvellous tales about plates and images of gold which abounded among the borderers; but when Raleigh, excited by these stories, urged an immediate attack, the crafty old Indian always prayed him to defer it till next year. Fully persuaded that these riches actually existed, he prudently deferred his attack till a more fitting season; and leaving one FRANCIS SPARROW and a boy, called Hugu Copwin, to make further investigations into the country and language, he took with him a son of the old Indian, as a hostage, and departed on his voyage, carefully exploring the country as he proceeded. He found many beautiful valleys abounding in deer, and lakes full of fish and fowl. In one of these lakes he met with "fishes big as a wine-pipe, which they called manati, and which is most excellent and wholesome meat." The manati is better known now as the sea-cow. Raleigh having descended the Orinoco to where it branched into three great rivers, divided his party, and explored the several branches, on the borders of one of which, the Winicapora, he discovered a mountain of crystal. "We saw it far off, and it appeared like a white church tower of an exceeding height. There falleth over it a mighty river, which toucheth no part of the side of the mountain, but rusheth over the top of it, and falleth to the ground with a terrible noise and clamour, as if a thousand great balls were knocked one against another." BERKELEY, his prisoner, told him that this mountain contained diamonds and other precious stones, the shining light of which might be seen at a great distance. Raleigh having explored several other rivers, or branches of the Orinoco, after numerous dangers and difficulties, at length succeeded in reaching Trinidad, where he had the happiness of meeting his ships, and shortly afterwards proceeded to England. His report of Guiana was most favourable. He represented it as richer than Mexico or Peru, as abounding in all manner "of fish, flesh, and fowl," and states "that for health, good air, pleasure, and riches, I am resolved it cannot be equalled by any region either in the East or West." Out of 100 persons who accompanied him in his romantic and perilous expedition, exposed to all the hardships of human life, such as want of food, raiment, habitation, and rest, and subjected to all the vicissitudes of the weather, and perils both by land and sea, not one died. "The soil," he adds, "is so excellent, and so full of rivers, as it will carry sugar, ginger, and all those commodities which the West Indies hath." To conclude, he adds: "Guiana is a country that hath never yet been sacked, turned, nor wrought. The face of the earth has not been torn, nor the virtue and salt of the soil spent by manurance;" and he winds up his exaggerated description of the country by declaring that among the prophecies in Peru, some of which foretold the loss of the said empire, there was one which affirmed that from "Inglaterra a nation

"would come which would subdue the conquerors of the Ingas." He further states: "I had sent Captain WIDDEX, the year before, to get what knowledge he could of Guiana; and the end of my journey at this time was to discover and enter the same. But my intelligence was far from truth; for the country is situate above 600 English miles farther from the sea than I was made believe it had been.

"But because there may arise many doubts, and how this empire of Guiana is become so populous, and adorned with so many great cities, towns, temples, and treasures, I thought good to make it known, that the emperor now reigning is descended from those magnificent princes of Peru, of whose large territories, of whose policies, conquests, edifices, and riches, PEDRO DE CEIZOR, FRANCISCO TOPZ, and others, have written large discourses. For when FRANCISCO PACARO, DIEGO ALMAGRO, and others, conquered the said empire of Peru, and had put to death ATABALIPA, son to GUAYNACAPA (which ATABALIPA had formerly caused his eldest brother GUASCAR to be slain), one of the younger sons of GUAYNACAPA fled out of Peru, and took with him many thousands of those soldiers of the empire called *oreciones*, and with those and many others which followed him, he vanquished all that tract and valley of America which is situate between the great rivers of Amazon and Baraquan, otherwise called Maraquon, and Orinoco.*

"The empire of Guiana is directly east from Peru toward the sea, and lieth under the equinoctial line, and it hath more abundance of gold than any part of Peru, and as many or more great cities than ever Peru had when it flourished most. It is governed by the same laws, and the emperor and people observe the same religion, and the same form and policies in government, as was used in Peru, not differing in any part; and, as I have been assured by such of the Spaniards as have seen Manoa, the imperial city of Guiana, which the Spaniards call El Dorado, for the greatness, the riches, and for the excellent seat, far exceedeth any of the world, at least of so much of the world as is known to the Spanish nation. It is founded upon a lake of salt water of 200 leagues long, like unto Mare Caspium, and if we compare it to that of Peru, and but read the report of FRANCISCO LOPEZ, and others, it will seem more than credible.

"It seemeth to me that this empire is reserved for Her Majesty and the English nation, by reason of the hard success which all these and other Spaniards found in attempting the same." Another strange prophecy.

"Sir WALTER RALEIGH, after his return to England, still brooded over in his mind (already filled with numerous schemes) his "favorite but visionary plan of penetrating into the province of Guiana, where he fondly dreamed of taking possession of inexhaustible wealth, flowing from the richest mines in the New World."† Prevented himself at that time from undertaking the voyage, he sent out Captain LAURENS KEYMIS, in 1596, to pursue the exploration. This navigator carefully traced the several rivers between the Orinoco and the Amazon, and described them in his travels as sixty-seven in number, enumerating also the names of the Indian tribes that inhabited their banks. On the 6th of April, 1596, he arrived

* DALTON.

* Discoverie of Guiana by Sir Walter Raleigh, Knt.

† Robertson, book ix. p. 174.

at the Orinoco, sailed up that river, passing by two havens, Topamaria and Topiawari, without meeting any Indians, who since the time that they had trafficked with RALEIGH, had been driven away by the Spaniards. KEYMIS returned to England without making any discovery of importance. Nor did any better success attend another expedition, under Captain MASHAM, in the same year. The following is an account of Captain KEYMIS's expedition:

On Monday, January 26th, 1596, he sailed from Portland Road in the *Darling*, of London, having in company the *Discoverer*, a small pinnace, which parted from them at sea in foul weather the Thursday following, and which they supposed to be lost. Friday, February 13th, fell in with the Camry Islands, and afterwards steered for the islands of the Cape Verde. Thence they sailed February 28, and on Sunday the 14th of March descried a low land in the bottom of a bay, the water very smooth but muddy, and the colour red or tawny. They anchored in the mouth of the river Arrowari, a fair and great river, and there explored the country, meeting the following rivers, Arcooa, Wiapoco, Wanari, Caparwaeka, Cawo, Caian, Wia, Macuria, Cawroor, and Curassuwini. While ascending some of these streams, he met with Indians, and stated to them that he had come only for the purpose of trading with them. These Indians exhibited a friendly disposition, and sought the aid of the English against another nation, the Arwaccas. KEYMIS procured a guide from the tribe of the Iaos, "who mark themselves with the tooth of an animal, after divers forms," and this man requested to be carried to England, which was done.

In addition to those already mentioned, the following rivers are enumerated by KEYMIS: Cunananma, Vraceo, Meivari, Mawarparo, Anoma, Marowini, Oncowi, Wiawiani, Aramatappo, Camiwin, *Shucinama* (now the Surinam), Shucama, Cupananma, Juana, Giritini, Winitwari, *Berhice*, *Hopari*, *Maicairini*, *Muhawacca*, *Wappari*, *Londrare*,* *Desaekebe*,* Caopni, *Panraoma*, Moruga, Waini, Barima, Amaeur, Aratoori, *Raleana*, or Orinoco. On the 6th April KEYMIS and his people came to anchor within the mouth of the last-mentioned river, after spending altogether about twenty three days in discovery upon the coast.

Having made friendship with the Indians, and promising to assist them against the Spaniards, our party were now in a fair way to obtain some authentic information with regard to Guiana. They heard of several towns in the interior, and of a nation of clothed people, called Cassanari, who dwelt close to the place where the river first took the name of Orinoco, and learned that far within they border upon a sea of salt water, named Parime. The famous city of Manoa, or the El Dorado, was reported to be within twenty days' journey from the mouth of the Wiapoco, sixteen from Barima, thirteen from Amaeur, and ten from Aratoori.

They were told also, of a race of headless men, with mouths in their breasts, exceedingly wide, called by the Charibes, Chiparengi, and by the Guianians, Ewiapnomos; and hyperbolical descriptions were communicated to them of the wealth of the interior, and of mines of gold, and precious stones.

¹ DALTON.

* The present rivers of the Demerara and Essequibo.

* Having quitted the Orinoco after repeated conferences with several Indian chiefs, they fell in with their long-lost pinnace, the *Discoverer*, which, after parting from them in a storm, had made the land to the southward of Cape Cecil, and had spent three weeks ranging along the coast. The pinnace being found not seaworthy, was burnt, and the party then proceeded to Trinidad, first making the island of Tobago, and afterwards setting sail through the islands to England, which they reached on the 29th June, having spent five months in their voyage.

Writing to Sir WALTER RALEIGH upon the subject, Captain KEYMIS urged strongly upon an English government, the policy of taking possession of Guiana. "England and Guiana conjoined, are stronger and more easily defended than if England alone should repose herself on her own force and powerfulness. For here," says he, "whole shires of fruitful rich grounds, lying now waste, for want of people, do prostitute themselves unto us, like a fair and beautiful woman in the pride and flower of desired grace." And he concludes in this strain, "In one word, the time serveth, the like occasion seldom happeneth in many ages, the former repeated consideration do all jointly together importune us, now or never to make ourselves rich, our posterity happy, our prince every way stronger than our enemies, and to establish our country in a state flourishing and peaceable. Oh, let not then such an indignity rest on us, as to deprave so notable an enterprise with false rumours, and vain suppositions, to sleep in so serious a matter, and renouncing the honour, strength, wealth, and sovereignty of so famous a conquest, to leave all unto the Spaniards."

In the following year, 1597, RALEIGH again appeared in the west, under command of the Earl of Essex, but the object of this expedition was rather for plunder, and to annoy the Spaniards (in which they were evidently successful), than with any view to discovery. The following is an account of this voyage to Guiana:

Upon Thursday, October 14th, 1596, the pinnace called the *Wit* departed from Lincolne, but owing to contrary winds, and other accidents, did not get beyond Weymouth before December 27th. On the 25th January, 1597, they made the Canaries, and meeting with several other vessels, both English and French, sailed in company with them to various places; at last, on February 12th, they set sail from Mayo, and stood for the coast of Guiana, and on February the 27th, they made the land, which appeared low, somewhere about Cape Cecil. They next reached the river Wiapoco (about 1 deg. north of the line), and explored it as far as the fall (about sixteen leagues), and found it full of islands, but met no Indians. They then sailed along the coast and traded with the natives. The traffic was principally in tobacco. They passed by the rivers Euracco and Amana, explored the Marawinne, and on the 4th of April reached the falls, having had frequent and friendly intercourse with the Indians. On the 18th April they entered the river Corintine,* and met with a small town named Warawalle. In this river they also met a bark, called the *John*, of London, with Captain LEIGH on board. They were told here, that on a neighbouring river, the *Dessekebe*,† there were lately about 300 Spaniards, but that most

* DALTON.

* The Corentyn.

† The present river Essequibo.

‘ of them were now destroyed, or dead. They also learned that this river stretched so far inland as to be within one day’s journey of the lake, called Parima, whereupon Manoa was supposed to stand; “and finding that the river Corintine doth meet with Dessekebe up in the land, we made account to go up into the country, to discover a passage unto that rich city.”

Accordingly, on the 28th April, a party, composed of about forty men and twenty Indians, proceeded in two shallops and two canoes to explore this passage. They diligently ascended the Corintine, sleeping at night in the woods and visiting several Indian towns, and arrived on the 2nd of May at the falls, over some of which they passed; but here their determination failed them, for learning that there were other falls not passable, and that the Indians higher up would probably oppose their progress, they resolved to abandon the undertaking, although Mr. MASHAM *yielded divers reasons to the contrary*. On the 1th of May they regained their ships, and a report having reached them that there were ten canoes of Spaniards in the mouth of the Corintine, they made ready for an assault. It appeared afterwards, however, that this was merely a foraging party in search of provisions for the settlers in Orinoco, Marneço, and Dessekebe. They described the river Corintine as about fifty leagues from the mouth to the first falls, crowded with islands, and having three tributary streams and six towns.

Having no further object to detain them, they cleared the river upon Sunday, the 8th of May, and took their course to the West Indies. Passing by St. Vincent, St. Lucia, and Martinique, they arrived at Dominica upon May 13th. Visited Guadaloupe on the 15th, and sailing along Montserrat, Antigua, and Barbadoes, steered across the Atlantic, and arrived at Plymouth on June 28th, without any casualty. The account given of Guiana by Mr. MASHAM confirmed the favourable evidence of Sir WALTER RALEIGH. In point of climate they found it temperate and healthy.

“ For besides that we lost not a man upon the coast, one that was sick before he came there was nothing sicker for being there, but came home safe—(thanks be to God).”

The Indians he describes as “ tractable and ingenious, and very loving and kind to Englishmen generally.” There was great store of fish and fowl of divers sorts. “ Tortoise’s flesh plentiful, and tortoise’s eggs innumerable; deer, swine, conies, hares, cocks and hens, with potatoes, more than we could spend, besides all kinds of fruits at all times of the year, and the rarest fruits of the world—the pine, the plantain, with other variable and pleasant things growing to their hands without planting or dressing.

He makes particular mention of Cassari (Cassava), “ which, says he, is as good bread as a man need to eat, and better that we can carry any thither.” He describes accurately the mode of preparing it, which is the same as that practised at the present time.

With reference to the commodities of the country, he speaks of a

* 'species of hemp, of cotton wool, pitch, gums, pepper, &c. ; also of parrots, monkeys, and other animals.

Not discouraged by the ill success, Sir WALTER RALEIGH, whilst in prison, still cherished his romantic visions about Guiana, and every second year during his imprisonment continued to send vessels thither to encourage the Indians against the Spaniards, and to prepare them for the protection of the English. At length, when liberated from the Tower, in 1616, he made arrangements for a grand expedition—raised about 10,500*l.* by selling his own and his wife's property, and attracted a great number of adventurers by the splendour of his reputation. A commission, dated 26th of August, 1616, was procured from King JAMES through the influence of Sir RALPH Wiwood ; but although released from confinement, and holding this commission, RALEIGH had not obtained a formal pardon. It is true that a pardon was offered him for 700*l.* by some of the courtiers, but this he refused, strengthened by the opinion of Bacon, who gave him the following advice :

Sir, the knee timber of your voyage is money ; spare your purse in this particular, for upon my life you have a sufficient pardon for all that is past already, the king having, under his broad seal, made you admiral of your fleet, and given you power of the martial law over your officers and soldiers."

Seven months after the date of the commission a fleet of 14 vessels was ready for sea, the largest ship being the "Destiny," 410 tons burden with 36 guns, being under Sir WALTER RALEIGH's own command.

On the 28th March, 1617, Sir WALTER RALEIGH dropped down the Thames. In the May following, he published his order to the fleet at Plymouth, but it was late in June, or early in July, before he started. The violence of the weather compelled him to put into Cork, where he was detained till late in August. He made the Canaries in September, the Cape de Verd Islands in October, and finally reached the continent of South America in November, after a very bad passage. They made Guiana on the 12th November. On board of RALEIGH's own ship, principally filled with his friends and relations, a great mortality had occurred. Forty-two persons had died on the voyage, as many more were ill, the great commander himself being amongst the sufferers. In a letter to his wife, after expatiating upon all the disasters he had experienced, he concludes in these words :—"To tell you that I might be here king of the Indians were a vanity. But my name hath still lived among them here. They feed me with fresh meat, and all that the country yields : all offer to obey me."

This letter was dated : "From Caliana, in Guiana, the 14th November." RALEIGH remained at the river Caliana until the 4th December, 1617, recruiting his shattered forces, and subsequently despatched five small vessels, under the charge of Captain KEYMS, to the Orinoco, to discover the mines. This little squadron had about 250 men in companies of fifty each, under the command of Captains PARKER, NORTH, RALEIGH (son to Sir WALTER), THORNHURST, and CHIDLEY. The remaining vessels

* of the fleet (five in number, some having deserted,) proceeded to Trinidad to await the result of the expedition against Orinoco, and to watch the Spaniards. The forces under Captain KEYMIS having landed on the Orinoco, marched up to the town of St. Thomas, which they attacked and captured, but with considerable loss. Amongst others, young WALTER RALEIGH fell at the head of his company. Captain KEYMIS, disheartened at the loss of his best troops, relinquished his search for the mines, and after slaying the governor of the El Dorado, DON DIEGO PALAMICA, and several of his captains, withdrew from the town and re-embarked his troops. RALEIGH'S interview with this commander led to a melancholy catastrophe. KEYMIS, unable to justify his conduct, retired to his cabin and destroyed himself.

Some of the other adventurers under Captains WHITNEY and WALSTON sailed back to Grenada. These circumstances preyed upon the mind of RALEIGH. The darling object of his ambition seemed no longer attainable, and after having sacrificed his son, his health, and his fortune, he left the Guianas for ever, and repaired to England, doomed to end his chivalrous career upon the scaffold.

Perhaps there is no tissue of romantic adventure in the history of human delusions more extraordinary than the narrative of these expeditions. For a period of upwards of one hundred years the belief in a kingdom abounding in gold and silver, whose capital was paved with the precious metals, and outshone the sun with the splendour of its precious stones, continued to dazzle the imaginations of men in all parts of the world, notwithstanding the repeated proofs which the failure of one undertaking after another furnished of the fallacy of their expectations. The "Arabian Nights" hardly contain an enchantment so marvellous as that which was exercised over the adventurous spirits of the sixteenth century by the poetical fables that were circulated of the El Dorado. They sought it in the east on margin of the Atlantic; they pursued the phantom to the north of the banks of the wild Orinoco; they followed its imaginary track to the west over the mighty Andes, through savage valleys, interminable forests, and perilous swamps, and to the south over the dark waters of the river Negro and the island-studded Amazon; but the land of promise vanished as they approached, and the farther they advanced the more hopeless was the pursuit. But disappointments, instead of damping their ardour, fired their determination anew, and accumulated disasters deemed to confirm their faith. Their bones whitened the banks of rivers—successive expeditions perished—and the few survivors who came back to tell the tale, only served to stimulate the delusion their example should have repressed and dispelled.

In this more instructed age we look back with wonder upon the infatuation that led to so vast an expenditure of energy and capital upon so manifest a chimera; but it is impossible at the same time not to admire the courage and perseverance that were wasted upon its pursuit. The resolution of these desperate adventurers mounted with the difficulties and dangers that surrounded them; the poisoned arrows showered upon them

‘ ‘ from the ambuscades of the trackless woods—the sickly heats of the climate—the horrors of the rainy season—the pestilent morass—the atmosphere charged with miasma—the earth and the air alive with reptiles and insects more formidable than the human foes through whose possession they had to pass—were encountered with a fanaticism which nothing short of the thirst of gold could have inspired or sustained.

The vision of the Golden City has now faded in the awakening light of knowledge. It has been reserved for a distinguished philosopher of the present age to submit the delusion to the test of science, and dissipate the gorgeous phantasy for ever.

“ In the universal search for El Dorado, two places appear more particularly to have attracted general attention—viz., the regions along the eastern slope of the Andes of Cundinamarca (New Granada), which have been considered as the birthplace of the fiction, and that part of Guiana which lies between the rivers Rupununi and Branco. A large inland lake, another Caspian Sea, as RALEIGH expressed himself, was the constant companion of the golden city. Whether or no this locality referred to the Andes south of Mexico, or to Guiana, we find it surrounded by water. Thus when the space where El Dorado was situated was supposed to be in Guiana, the name of the river Parima, and the inundations to which the flat country or savannahs were subjected, through which the rivers Parima, Takutu, Xurumu, Maku, and Rupununi take their course, gave rise to the fable of the White Sea, or Laguna del Parima, or Rupununi. Captain KERRIS, who, at the expense of RALEIGH, undertook a second voyage to Guiana, identified the locality of Dorado with this lake, which, as he imagined, contained the town of Manão; and HERMOLDT, after fully examining into the subject of the lake Parima, proved that it no longer existed. Its erasure from the maps put an end to the long and painful illusion of the El Dorado.”

It has already been stated, that the Dutch in the year 1580, had formed settlements on the Pomeroon and the Essequibo. Upon the former they had a factory called Nieuw Zealand, and, in the following year 1581, ⁹ ‘ the States-General of Holland privileged certain individuals to trade to the coast. These proceedings were viewed with a jealous eye by the Spaniards, who, aided by the Indians, drove the Zealanders from their station. The persevering character of the Dutch would not allow a first check to daunt their efforts; their commander Joost VAN DEN HOOD succeeded in gaining possession of a small island at the junction of the Mazerooni and Cayuni, called Kykoveral, and in 1602 JAN VAN PEERE, a native of Flushing, attempted to open a trade with the Indians of the Orinoco, but was defeated by the Spaniards; the Zealanders, however, about this time effected a settlement on the banks of the Essequibo: in 1613 they reported their colony to be in a flourishing condition, and in 1621, the Dutch Government undertook to supply the colonists with negro slaves from Africa; for the prosecution of which a company was formed and a monopoly granted. JAN VAN PEERE, with his companions, when

¹ DALTON.

⁹ MONTGOMERY MARTIN.

driven by the Spaniards from the Orinoco, commenced colonizing on the banks of the Berbice river, and cleared a large extent of territory between the rivers of Berbice and Comrantyn. In 1657, the Zealanders colonized on the river Pomeroon, and the creek Morocco, and erected thereon the towns of New Zealand and New Middleburgh. It is said that, in 1662, after its settlement, the *whole coast* was ceded by CHARLES II. to Lord WILLOROUGH, the then Governor of Barbadoes, who named the principal river wherein Paramaribo is situate, and, in fact, the whole colony, *Surryham* (in honour of the Earl of Surry, the term being afterwards changed into *Surinam*), and thus the colony was purchased from the heirs of Lord WILLOROUGH by the British Crown, and exchanged with the Dutch Government for New Holland, in North America (now New York). Essequibo, in 1665, was taken by the English, and afterwards plundered by the French; but both were expelled from the Dutch colonies in the following year, by an expedition from Holland. In 1669 the whole of Dutch Guiana was transferred from certain gentlemen in Amsterdam (1669, 1670, &c.), who claimed to be proprietors, to the Dutch West India Company. In 1712 the French took possession of Berbice by force from the Dutch proprietors; but, in 1714, returned to its former owners, on the payment of a sum of money. At this period the States-General contracted for the supply of negroes to the Colony, in the proportion of two-thirds male, and one-third female, at the rate of 250*l.* each.

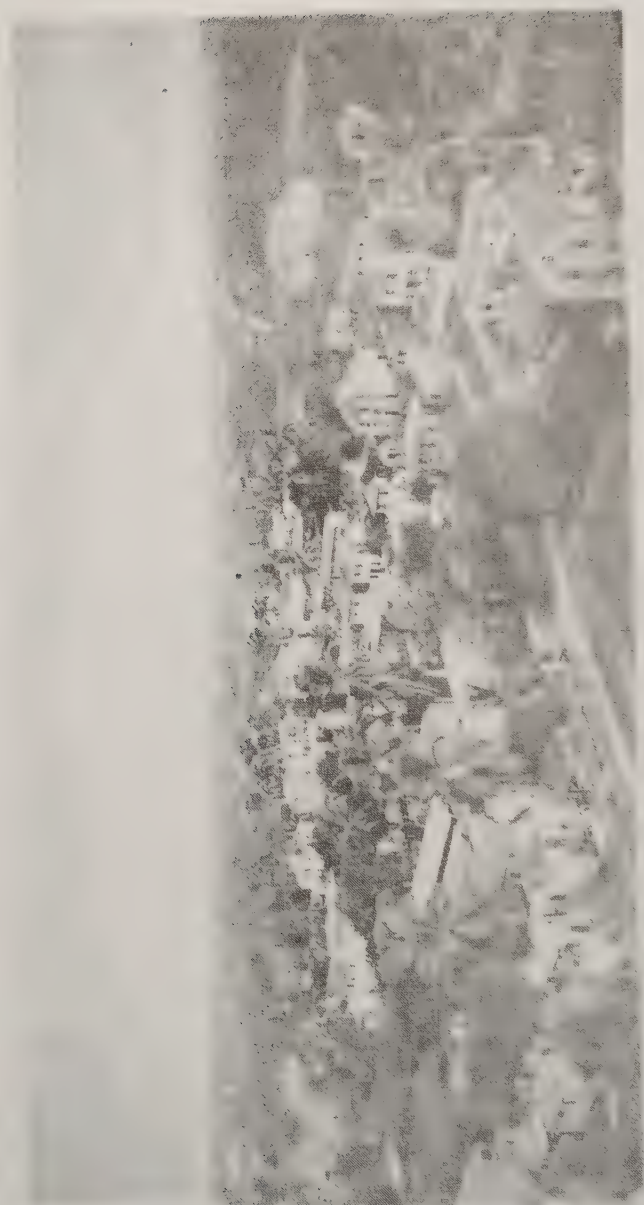
In 1720 the proprietors of Berbice, not having a capital equal to the cultivation of which the colony was capable, raised a fund of 3,200,000 florins, divided into 1600 shares of 2000 each, to be employed solely in cultivating sugar, corn, and indigo; 50 per cent. was to be repaid in 1721, the remainder when required by the Directors, who consisted of seven Proprietors (afterwards increased to nine), of 20,000 florins each, residing at Amsterdam: the former Proprietors of Berbice were also to be paid 800,000 florins, or allowed to purchase 400 shares. From this period the Colonies rapidly flourished and extended; coffee cultivation was introduced from Surinam, and a fort built at the junction of the Canje. A passage from the river Amazon to the Essequibo was discovered, in 1735, by a Portuguese named SILVA DE ROSA, who had been private secretary to the Viceroy of Brazil; but, having killed a nobleman in a duel, he fled with some negroes in a canoe along the Rio Branco, Tacusa, or Tatacotu, Maou, and across the lake Amrica; thence entering the Rupununi, and finally reaching Essequibo.

In 1741 the planters at Essequibo, thinking the low lands near the sea more productive than the upper country, over which they had previously settled, began emigrating to the former; and, in 1745, the Directors of the Chamber of Zealand gave permission to form plantation on the uninhabited coast of the river Demerara. A most disastrous negro insurrection took place in Berbice in 1763, from which the colony was not relieved until after eleven months' desolation, and only then by the arrival of a strong squadron from Holland. Courts of policy and of civil and criminal justice were established for Demerara 1773, on an island named Borsden or

¹⁰ 'Borselen, about twenty miles up the river; but, the following year, the seat of Government was removed from thence to the east point of the mouth of the river, and named Stabrock, now George Town. In 1781 the colonies on the Essequibo and Demerara were placed under the protection of Great Britain by a squadron of Admiral Lord Rodney's fleet; but, in 1783, the French took temporary possession of the whole Dutch settlements, which, in 1796, surrendered to the British forces under the orders of Sir RALPH ABERCROMBIE, and commanded by Major-General WHITE. These settlements were, however, restored to the Dutch by the treaty of Amiens, in 1802, but again taken possession of by England on the breaking out of the war in 1803; since which period they have belonged to Great Britain. In 1812 all distinctions between the colonies of Essequibo and Demerara, whether of jurisdiction or otherwise, were abolished—the office of commander of Essequibo was done away with, the courts of civil and criminal justice of both colonies united at Demerara, and the judicial establishment at Fort Island discontinued; the name of the capital was also changed from Stabrock to George Town, and a board of police appointed for its internal management, the financial representations of Demerara and Essequibo combined with the college of Kiezers, and the right of suffrage extended to all persons paying income tax on 10,000 florins, or possessing twenty-five slaves. In 1807 the slave-trade was only finally abolished. By an additional article to a convention signed at London, 13th August, 1814, Demerara, Essequibo, and Berbice were finally ceded to Great Britain, with the condition that the Dutch proprietors had liberty, under certain regulations, to trade with Holland. The year 1818 witnessed the first introduction of trial by jury and the commission of *oyer and terminer*. In 1820, after much angry dispute relative to the enormous and illegal exactions of fees, a tariff of the same was fixed, and a petition to the Crown, praying for an inquiry into judicial abuses agreed to, which enquiry was ordered. A serious insurrection of the slaves took place on the east coast of the Demerara river, in 1823, which was finally suppressed, and Mr. SMITH, a Missionary of the London Society, being accused of inciting the negroes to rebellion, was condemned to death—a sentence which was commuted at home, to total banishment from the West Indies: Mr. SMITH died in prison pending the sentence. The members of the London Missionary Society and many others, believing him innocent and his sentence undeserved, have erected to his memory in the City of Georgetown, a place of worship called Smith Chapel.

Under the Dutch, Demerara and Essequibo constituted one government, and Berbice another, which arrangement continued in force under the British Administration down to the year 1831, when the Colonies of Demerara, Essequibo, and Berbice were united unto one government, and called British Guiana.

¹¹ 'The constitution of the Colony of Berbice dates from the year 1732; under it the Governor was nominated by the Directors of the Mercantile Body called the Berbice Association, and he was assisted by a council of six; any vacancy occurring being filled by the Governor's



selection of one out of two nominations submitted by the remaining councillors. In the year 1817, however, an order was made by the Prince Regent in Council, requiring *three* nominations to be made in lieu of *two* for the Governor's selection, and also declaring that if no such nomination were made in fourteen days, the Governor should be entitled to appoint absolutely to the vacancy. In 1826 an order of the King in Council was issued, dissolving the then Council of Government, appointing another, and thenceforward vesting the right of appointing to vacancies in the Governor as representing the Crown.

The Court of Policy for Demerara appears to have been established in 1773, and in 1789 that for Essequibo merged into it, and the seat of Government for the United provinces was established at Stabroek, the site of the present metropolis, Georgetown; under these circumstances, disputes having arisen between the Colonists and the local Government, and West India Company, as to the right of appointing the colonial members of the Court of Policy, in the year 1788, a provisional "Plan of Redress," as it was termed, being in fact the draft of a new constitution, was framed by a Committee of the States-General, to whom had been referred sundry petitions of the Colonists. This being approved of, a commission was despatched by the States-General to the Colony, and on their arrival in 1789 they dissolved the then existing Government, and established a new one for the conjoined Colonies, upon the basis of the scheme in question, which continued in operation notwithstanding the capture of the Colony by the British in 1796 and 1802 and its cession in 1803, the Articles of Capitulation having stipulated that the laws, usages, and institutions of the Colony should be maintained as before. It is, therefore, advisable now to advert to the leading provisions of that document.

The Council or Court of Policy was to consist of 1st, The Director-General; 2, The Commander of Essequibo; 3, The Fiscal of Essequibo; 4, The Fiscal of Demerara; 5 and 6, two Colonists from Essequibo; 7 and 8, two Colonists from Demerara.

The Members (unofficial) were to be chosen "from among the principal, most capable, and most religious inhabitants, above twenty-five years of age, professing the Protestant religion, and perfectly acquainted with the Dutch language, and who had resided at least three years within the Colony." It will be essential to bear in mind, that no other definition of the qualification of a Member of the Court of Policy has existed to this moment inapplicable as the preceding obviously is to the altered state of things.* There was in addition a provision against the eligibility of parties within certain degrees of consanguinity, which, however, has been practically disregarded.

By a Proclamation of Governor BEAUFON in 1796, it was enacted that any person duly elected and declining to serve, should be liable to a penalty of three thousand guilders, unless he had served within two years next preceding his election.

In the first instance, the unofficial portion of the Council was to be chosen from a double nomination by the Colleges of Keizers or Electors,

¹ Col. Orlow List.

* Ord. No. 1 of 1851 defines the qualification now requisite for a member of the Court of Policy.

¹³ of which there were two, one for each Colony,* each consisting of seven Members elected by a majority of the votes of the inhabitants possessing not fewer than twenty-five slaves, such votes to be in writing and signed by the voter. The tenure of the Office of Keizer, as subsequently defined by Proclamation of Sir BENJAMIN D'URBAN in 1831, was to be for life, unless the party resigned or ceased to be an inhabitant. The Keizers, before proceeding to a nomination, were to be sworn to the faithful discharge of their office before the Director-General a ceremony which continued to be observed before the Governor until the passing of Ordinance No. 16 of 1864.

By this Ordinance it is laid down that two members or by a majority of them, if more are present, are competent to nominate an elective member for the Court of Policy. The following oath is taken by a member of the College of Electors upon his appointment:—

I do most solemnly promise and swear that I will nominate only such person for the office of an elective member of the Court of Policy, on the occurrence of vacancies in the number of elective member of the said Court as to the best of my knowledge and belief are duly qualified according to law, without being guided or biased in making such nomination by any solicitation or persuasion from any person whomsoever.—
So help me God.

A periodical change in the constitution of the Council or Court of Policy was secured by providing that the Senior Colonial Member should retire yearly.

The Director-General was to be allowed a double vote, and the Secretary of Demerara was to be the "Minister of the Court of Policy."

Such seems to have been the *original* Legislative Constitution of the Colony. We now come to the occasion on which what are termed "Financial Representatives" were added.

It appears that in 1795 it was deemed necessary during a period of some confusion, to introduce four members "commissioned" by the Colleges of Electors of both Colonies to have jointly with the Court of Policy the administration of the Public funds.† In the following year, however, Governor BEAUJON thought fit to annul that arrangement, and to enact that to secure to the inhabitants a more ample representation at the raising of taxes, in lieu of the four above-mentioned, there should be six inhabitants adjoined to the Governor and Court of Policy, three from each Colony, to be elected by the inhabitants qualified as in the case of Keizers and to serve for two years, but whose powers should be strictly limited to the raising, with the Court of Policy, Colony taxes and examining also with that body the public accounts.

BEAUJON's proclamation, however, was materially modified, though without affecting the definition of the duties of the Financial Representatives, by a proclamation of Acting Governor CARMICHAEL in 1812, consolidating the two Colleges of Keizers and Financial Representatives.

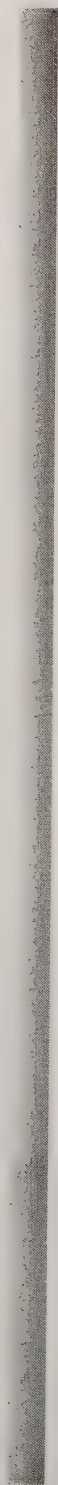
¹³ Col. Office List.

* Demerara and Essequibo only here are alluded to.

† Beaujon's Procl., Loc. Guide.



5 View from the Genoa Lighthouse—looking south.



¹³ This proceeding remained operative though unconfirmed by the Crown until 1831, when Sir George Murray, *Baronet*, Governor of the Colony, and it was annulled by a Royal Instruction restoring the pre-existing arrangement, and extending the right of suffrage to the inhabitants of Berbice.

Such is the state of things which has remained up to the present time with the exception, in regard to the franchise hereafter to be noticed and from which the inference seems to be clear, that the Financial Representatives had, and have, no authority whatever, except by express permission from the Crown, to discuss any item upon the estimate so as to alter its amount, although they might refuse to include any sum to which they objected in their calculations of the funds necessary to be raised by taxation.*

The inherent right of the Financial Representatives to exercise this power, has been however strongly maintained by the Colonial Members upon all occasions, and this has led to collisions between the Executive and the Elective section of the Court.† The position they assume is based upon the construction of certain passages in a decree of the States-General, dated 27th August, 1788, to the effect that "the contributions for the Colonial Chest are to be regulated by the inhabitants themselves," and in the instructions issued to Director-General VAN GROENINGH in 1793. "He will take care not to leave the administration of the Colony Chest wholly to the Colony Members of the Court of Policy, but will thereto admit a greater number of the Colonists, for example the Kiezers of both rivers," and also upon the nature of certain entries in the Minutes from 1798 to 1806. They do not appear to bear out the claim of right which has been founded upon them, since the evidence throughout seems to proceed upon the assumption that due provision has been previously made for the Sovereign's Chest, which is represented by the modern Civil List.

The foregoing is a succinct but sufficiently accurate sketch of the Legislative Constitution, as it existed up to the year 1849, when the first step in the process of amelioration was effected by the passing of the Ordinance, No. 15, for regulating the elective franchise, and dividing the Colony into Electoral Districts.

The great principle of the whole system of Government is evidently *centralization*. Until the year 1826, there existed not even local subdivisions of the Colony. Demerara and Essequibo were then distributed into ten Parishes, and the same process was subsequently applied to Berbice. This arrangement, however, was hardly carried out, involving no civil authority or jurisdiction, for the Members of the Vestries, constituted to administer them, were, and still are, nominated from time to time by the Court of Policy, while the Combined Court grants the only funds at their disposal whether for maintenance of the fabric, or support of the poor,

¹³ Col. Office List.

* During their discussions on the Civil List in 1848-9, it was suggested by some of the Elective section to add on

† Proceeding of the Court of Policy, 1848-9, p. 2.

¹³ exclusive of what trifling income may be derived from the seat rents of the Churches.

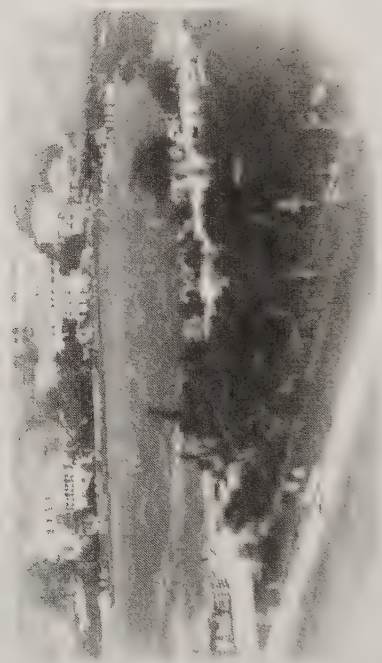
It was not until 1837 that the first municipal body was incorporated, nor had the principle until the passing of Ord. 25, of 1860, been materially extended in its application, although some advances had undoubtedly been made.

In the year 1855, under the administration of Governor Wodenhouse, an Ordinance was passed, to alter and amend the Political Institutions of the Colony; but although in many respects a great improvement upon the existing state of things, it failed to receive the approval of Her Majesty's Government, and consequently never came into operation. The leading principles of that measure were the abolition of the College of Electors, and providing for the election of the unofficial members of the Court of Policy, as well as of the Financial Representatives, by the direct and open voting of the constituency created by Ordinance 15 of 1849; and the enlarging of the qualification for a seat in either body, by including the tenure of property under lease, and income from whatever source derived, of not less than 300*l.* duty per annum. All preceding Proclamations and Laws (except 15 of 1849) were repealed; so that this would have become the Constitutional Charter of the Colony. Since that time no legislation has been attempted in the same direction until the passing of Ordinance No. 1 of 1864, which, however, is a mere declaratory act, defining the meaning of the term "Colonist," as employed in the "Plan of Redres" above noticed; and Ordinance No. 16 of 1864, to remove some difficulties in the exercise of the functions of the College of Electors.

The constitution may be summed up very briefly. It consists of a Governor, Court of Policy, and a Combined Court. The functions of the Executive and Legislative Councils, and of the Assembly, are performed by the Governor and Court of Policy, assisted by the six Financial Representatives for certain purposes.

The Court of Policy is composed of five official and five elective members. The official members are the Governor, the Attorney-General, the Receiver-General, the Auditor-General, and the Government-Secretary, who is also the Secretary to the Court. The elective members are chosen as follows:—When a vacancy occurs the seven Kiezers, who are chosen for life, meet and submit to the Court of Policy the names of two persons, from whom one is selected by the Court. All laws are enacted by this body, which also takes a prominent part in the general administration of the affairs of the Colony.

The Constitution, however, requires that for the purpose of voting the annual expenditure and framing the taxes, they shall call to their assistance the six Financial Representatives, during whose attendance the Court is called the Combined Court. The Colony is divided into five Electoral Divisions, each of which has its Kiezer or Kiezers chosen for



¹³ 'life, and one or more Financial Representatives, elected for two years, and eligible for re-election.

ELECTORAL DIVISION.	REPRESENTATIVES.	REGISTERED ELECTORS.
1 County of Demerara . . .	1 Kiezer 1 Financial	160
2 City of Georgetown . . .	" 1 "	502
3 County of Essequibo . . .	2 " 2 "	137
4 County of Berbice . . .	1 " 1 "	40
5 Town of New-Amsterdam	1 " 1 "	68
	7	907

In the Colony of British Guiana the Roman Dutch law is in force in civil cases, modified by Orders in Council and Local Ordinances; the Criminal Law is now the same as that of Great Britain, and is administered in the same manner, except that there is not the intervention of a Grand Jury.

There is no House of Assembly or Executive Council.

<i>Revenue and Expenditure.</i>			<i>Total Value of Imports and Exports.</i>		
	£	£		£	£
1856	230,595	235,013	1855	886,016	1,331,371
1859	274,615	245,217	1860	1,115,958	1,513,152
1860	279,821	302,533	1861	1,339,712	1,583,619
1861	303,753	305,144	1862	1,107,181	1,365,295
1862	275,007	296,959	1863	1,121,979	1,679,385
1863	261,625	251,185	1864	1,508,560	1,815,351
1864	308,800	249,708	1865	1,359,292	2,089,639
1865	309,371	300,611			

Population in 1861.

Natives of British Guiana.	West India Islands.	Madeira or Cape de Verde.
93,861	8,309	9,859
Europe.	North America.	Other places.
1,182	117	298

Immigrants.

Africa.	Madras.	Calcutta.	China.	Miscellaneous Population.
9,299	3,664	18,416	2,629	943

Total population, . . . 148,907

The aboriginal Indians were estimated in 1851 at about 7,000; but the best authority in the Colony, Mr. M'CLECKROCK, Superintendent of Rivers and Creeks, Pomeroon district, carries the number now as high as 20,000 or 21,000. He is of opinion, that the return in 1851 was greatly under-estimated, and that the disturbances in Venezuela have caused large accessions to the numbers of the tribes within the British territories.'

CHAPTER II.

CLIMATE.—Mean Temperature—Wet and Dry Seasons—Earthquakes—Fall of Rain—Epidemics—Transparency of the Atmosphere—Health of the Colony compared with other Countries.

² 'Though Guiana is situated in the torrid zone, it enjoys comparatively a more temperate climate than other countries under the same latitude. The mean temperature for the year is 81 deg. 2 m., the maximum 90 deg., the minimum 74 deg. It is generally considered that two wet and two dry seasons constitute the changes during the year. The great dry season commences at the coast regions towards the end of August, and continues to the end of November, after which showers of rain follow to the end of January; the short dry season commences in the middle of February, and continues to the middle of April. The rains descend afterwards in torrents, and the rivers commence to inundate their shores. During that period the wind is frequently from the west and south-west, and, coming from the land is thought unhealthier than the regular sea-breeze, which during the dry season begins to set in between ten and eleven a.m., and continues until sunset, sometimes even through the night. The months of October and November are the most delightful in the year; the sky cloudless, the heat moderate, and the thermometer at noon tide scarcely higher than 85 deg. Part. During the rainy season the oppressive weights of the atmosphere is tempered by northern breezes, and in the months of September to November the breezes from the east and south-east, which have passed over a vast extent of the ocean, are invigorating, and refresh the air to such a degree, that through the night the thermometer has been known to fall to 74 deg. Fahr.

The moisture necessary to maintain vegetation is then replaced by dew; and not only in the interior, where the country is not extensively cleared, but likewise in the open savannahs, the trees and plants will be found in the morning dripping with dew.

The change of the season marked by severe thunder-storms; but however loud the peals of thunder may reverberate, and however vivid the flashes of lightning which precede them, fatal accidents by lightning seldom occur in Guiana. Gales are scarcely known, much less those terrible phenomena of nature, hurricanes, which in the neighbouring islands destroy in a brief time the fruits of many years' labour, causing devastation and loss of life to a vast extent.

² 'A few shocks of earthquake are occasionally felt, but they are so insignificant that the inhabitants scarcely notice them when they occur. The temperature of the interior is still more mild, and the climate healthy. The season in the interior is only marked by two changes; from the month of August to the month of March there are only occasional showers, but from March to August the rain descends in torrents, and the rivers commence to swell and overflow their banks, to a greater or less extent according to their locality.

It is usually assumed that the year is divided into two wet and two dry seasons, but latterly the periods of such changes have not been well marked.'

³ 'From tables given by the late Mr. SYMMONS, of the Colonial Observatory, it is shewn that the annual fall of Rain, during a series of 7 years, varied from 7 to 11 feet. It is, however, to be remarked, that although the amount of rain is so great, it seldom rains for 12 hours consecutively, and that a day rarely passes without fair weather and sunshine.

The climate of British Guiana is commonly regarded as unhealthy, and prejudicial to Europeans especially; but experience demonstrates that it is under ordinary circumstances as favourable to human life as that of many European countries.' ⁴ 'It is believed "that the range of mortality even among the labouring population, is about one in 37 to 40, but in London and France it is equal as regards the whole population, rich and poor, and in other countries it is even more; thus in Naples 1 in 34; Wirtemberg, 1 in 33; Paris, 1 in 32; Madrid, 1 in 29; Rome, 1 in 25; Amsterdam, 1 in 24; Vienna, 1 in 22½; and a comparison of the mortality in Demerara and the healthy county of Rutlandshire in England proves that duration of life is in favor of the Colony.'

⁵ 'It is nevertheless true that the climate is not well adapted to the constitution of white persons coming from temperate regions to be employed in the cultivation of the low lands. The unfavourable impression in regard to the insalubrity of the Climate of Guiana has probably originated in the occasional occurrence of the Yellow Fever epidemic, the subjects of which are almost exclusively from the stranger population, including seamen especially. Such epidemics are chiefly confined to the Sea Port Towns of Georgetown and New-Amsterdam, and rarely extend inland. Sir R. SCHOMBURGK states, that "the salubrity of the interior is proverbial, and there are many instances of longevity among the settlers on the banks of the Rivers Demerara, Berbice, and Essequibo. The natural drainage is here so perfect that all impurities are swept off by the torrents of rain, and the purity of the air is so great that the planets Venus and Jupiter may be seen in the day time. While descending the upper Essequibo in December, 1838, we saw, one afternoon at three o'clock, the Sun, the Moon, and the planet Venus."

² SCHOMBURGK.

³ Cat. con. from D. Guiana to Lon. Ex. 1862.

⁴ MONTGOMERY MARTIN'S History of the West Indies.

CHAPTER III.

GEOLOGY AND SOIL.—Delta of the Essequibo—Granitic Rocks—Composition of the Coast Lands—Artesian Wells—Forests of Courida—Amazing Fertility of the Soil—Pegus Lands—Ochres, Iron, Mica and precious Metals found—Mining attempts by the Dutch—Mountain of Solid Granite—Veins of Quartz—White Clay—Rock Chrystal—Red Agate—Conoko Mountains—Fertile Savannas.

² 'Little is known of the geological strata of Guiana. An alluvial flat extends along the sea-coast for about thirty miles inland, terminating at a range of sand-hills. Artesian Wells have since been sunk in various parts of the colony, and water obtained at depths varying from 100 to 145 feet. This supply has proved a great advantage to the inhabitants. At twelve feet below the alluvial surface, an irregular stratum of fallen trees (of a kind called the Courida, and still known on the coast) was discovered, in a semi-carbonized state, and, at forty feet depth, blue clay; at fifty feet below the surface, another similar stratum of decaying wood, twelve feet thick; nine feet deeper, a compact of whitish grey clay; thirty-one ditto, yellow sand, mixed with clay; six ditto, violet-coloured clay, diminishing in shades to yellow light straw, and again merging into slate-coloured clay; the remainder, to a depth of 120 feet from the surface, is argile, the lower part being of that smooth, soapy surface indicating the purest Wedgewood clay. Mr. HILLHOUSE says, that it seems evident from this, 'that, some ages ago, this continent was habitable fifty feet below the present surface, and that it was then covered with an immense forest of Couridas, which was destroyed by conflagration, as appears by the ochrous sub-stratum. The sea must, at that time, have been confined to the blue water, where there is now eight or nine fathoms; and, whatever may have been the comparative level between the Pacific and Atlantic, on this side of the Isthmus of Darien the surface must have been then fifty feet lower than now.' It may, however, be supposed that the bed of the Demerara river had been gradually filled in by the alluvial deposit of earthy materials brought down by the floods, together with Courida and drift woods, as is now going on along the Guiana coast.

The delta of the Essequibo, and to a considerable extent along all the rivers, is decayed vegetable matter, forming a fertile black mould, on a clayey sub-stratum. As the Essequibo is ascended, the alluvium of the estuary changes to white sandstone, with scattered appearances of black

* 'oxyde of manganese, or black sand; to the sandstone felspar succeeds, and then granite. The mountain ranges seen on passing from the Essequibo into the Mazarooni, appear to be white quartz, 5000 feet high, having the appearance of gold, from the numerous shining particles of mica in the quartz, which give to the mass the appearance of the precious metals; thus forming the far-famed El Dorado of the chivalrons and ill-treated RALEIGH. RALEIGH'S Peak is supposed to be volcanic, and, according to the Indians, several volcanoes exist in the interior, particularly between the Siparoonce and Riparoonce rivers. On the Demerara river, the first indication of rock is met with at seventy miles from George Town, under water; it appears to be porphyritic sandstone. At the post-holder's, which is said to be 6 deg. 30 m. (ninety-four miles from George Town), there is a large bed of rocks, of a granitic nature, with some hornblende; and at the rapids, 106 miles up, or seventy miles, as the crow flies, from George Town, there is abundance of stratified greenstone.

The structure of the mountains is principally granite, with a large proportion of ironstone. The coast lands of the whole colony are principally composed of an alluvial blue clay, intermixed with narrow strata of sand, and, on the Mahaica coast, with sand and shell reefs.

This tract is most particularly adapted to the cultivation of sugar, cotton, and plantains, to which it is mainly devoted; nor does there exist in the known world a soil possessed of such amazing richness and fertility. It is never manured, though an acre has been known to produce upwards of 6000 lbs. of sugar, or 20,000 lbs. of farinaceous food (the plantain), in a year. As we go deeper into the interior, the clay loses its blue tinge, and gradually becomes yellow; at this stage, it is always covered with a stratum of vegetable residuum, called *pegas*, which is the half-decayed vegetable mould from dead grass and leaves, and is, in many places, several feet deep, forming a great impediment to cultivation.

Plantains do not thrive in this land; but it is peculiarly favourable to the growth of coffee, which has now almost ceased to be cultivated.

Behind the *pegas* lands come high ridges of sand, interspersed with valleys, in which is a slight admixture of clay. These sand reefs present many fertile spots for the cultivation of coffee, cocoa, arrowroot, fruits, and ground provisions of all kinds; and, extending in their direction parallel with the sea-coast, are occupied exclusively by the Arawak nation.

To the south of this belt the rocky region commences, consisting of elevated ridges and detached conical hills, resting on bases of sand, stone, granite, and silicious crystal, containing a great variety of ochres and iron ores, mica, prismatic, hexagonal crystals, and, in some instances, slight indications of the precious metals. Though it is fully as probable that gold and silver exist in the primitive mountains of the west, as well as in those of the eastern coast, yet no native specimens have ever been produced by the Indians within our territory. Two or three attempts at mining were made by the Dutch, on their first settlement in Essequibo, but the ore was not found worth the expense of working. The most probable site

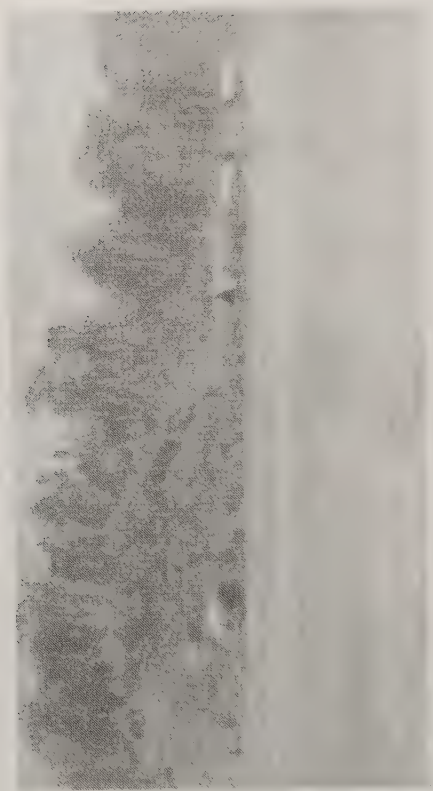
of the precious metals is in the mountains of the Attaraya and other distant nations.

The rocky region is possessed by the Aceaways and Caribsee, interspersed with small settlements of Maconsi and Paramuna; but these latter are principally found in the debatable land at the foot of the mountains, where they become the alternate victims both of the coast tribes and the mountaineers.

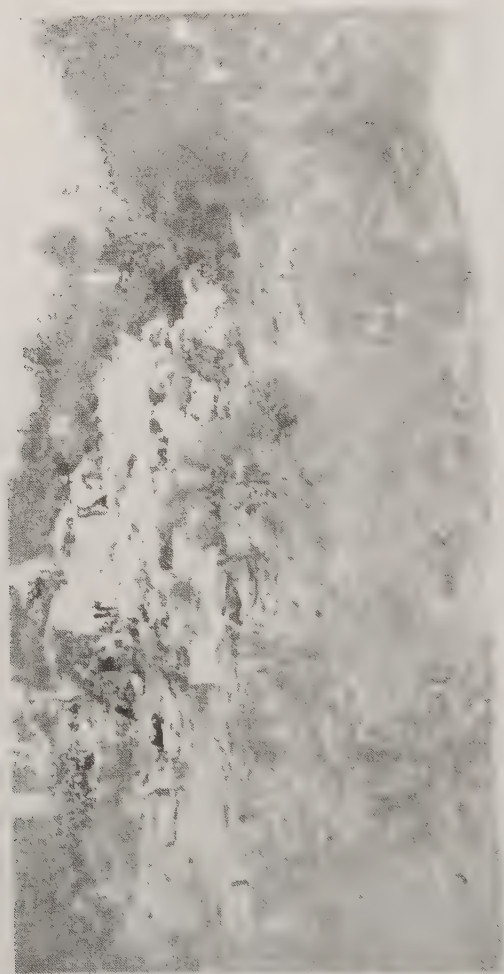
In addition to the foregoing details, derived from various sources, I am indebted to the urbanity and science of Dr. HANCOCK of Demerara, for the following development of the geology of the interior of British Guiana, in which the learned and philanthropic doctor has long resided. Nothing of petrifications, sea shells, or the organic remains of Marine animals has yet been observed in the mountains of the interior of British Guiana. The principal component parts of the interior mountains are granite, porphyry, and their various modifications, all denoting a primitive formation; while the exterior ranges towards the coast of a minor elevation, are chiefly composed of indurated clays, with sand and gravel stones; indicating a secondary order of formation. The great rocks of the interior are chiefly of a conoidal figure. On a savannah in 2 deg. 50 m. north latitude, there is a mountain called *Weive* or *Hey-wey*, composed of *one* entire solid block of granite, seven hundred feet high; and about forty miles to the north-east is another still higher, called Taripoor (devil's rock); they are both of the cone or pyramid shape, much exceeding the Egyptian piles in elevation and magnitude. Veins of quartz are very common traversing the great masses of granite, and most conspicuous along the channels of the rivers in the dry season; the directions of all the strata in Guiana being almost uniformly from north-east to south-west. Vast quantities of iron are met with in the mountains, the soil of which, as also that of many parts of the interior, consists of a strong and fertile loam; being a mixture of clay, sand, and vegetable mould, with little calcareous earth, but much ferruginous matter, giving to the soil a reddish tinge in some places. The soil of some of the upland savannahs is composed of clay and gravel, very close, and though apparently sterile, yielding food for the immense herds of cattle and horses that depasture along the Rio Branco. Of a very pure white clay there are immense masses forming the high banks of the Essequibo above the falls, which would probable prove a valuable article in the manufacture of stone-ware or porcelain, as would also the huge blocks of milk-white quartz found in various places. Some indurated clays, of great hardness, have been found mixed with sand, mica, calcareous earth, oxyde of iron, &c., amorphous and full of particles of a metallic brilliancy. These indurations, which are of various degrees of hardness, lie in horizontal strata, breaking into diagonal plates; they are found along the edge of the water, and, Dr. HANCOCK thinks, are caused from the alternate influence of the sun and water, assisted by a deposition of heterogeneous earthy matters. Substances of a metallic nature, which have the appearance of ores, are also very abundantly met with in the mountains, but still more plentiful among the falls and rapids of the river.' (The existence of Gold in various parts







2 View of the British Guiana Gold Company's Diggings on the Cayman.



3 View of the Quarta Rock at the British Guiana Gold Company's Digging on the Rio Cayana



* of British Guiana is now an established fact. On the Cayuni, 3 days journey from the City of Georgetown, the British Guiana Gold Company has erected machinery for the crushing of quartz. The yield is stated to be considerable, and a good return to the enterprising Company may be anticipated.) † Rock crystal is found upon several mountains of Demerara, growing (if it may be so said) out of beds of quartz. Dr. Haxcock only met with one species, and that always crystallized into hexagonal columns, and generally terminated by a single pyramid with from three to six faces. These columns are commonly found solitary, but are sometimes met with in groups, standing together, as it were, agglutinated. They are perfectly transparent, of a water colour, taking a fine polish, and nearly as hard as agate. Red agate is found in the Rio Maow opposite, and not far distant from a crystal mountain. Much of the land at Moroko is thickly scattered over with silicious gravel stones of an iron colour. At this range of mountains, primitive rock, in smaller or larger portions, is every where to be seen; no traces of a secondary formation are visible; on most of them are found large masses of indurated clay, scattered in loose masses amongst the granite, but no calcareous matter or organic bodies are to be found; and they appear as if undisturbed since the creation of the world. The Conoko mountains (belonging to the chain of the cataracts of the Orinoko) form an insulated group, seated on the elevated plains, which separate two great systems of rivers; the tributary streams of the Essequibo flowing north-east, and those of the Tacutu, Branco, &c., south-west, towards the Rio Negro and Amazon. From the summit of these mountains can be seen the spot where the Tacutu and Rapanooni take their rise. The soil here consists chiefly of a pure white clay, (not chalk as some suppose) giving to the Rio Branco and other rivers a milky colour, owing to the quantity of clay therein diffused, and in such a minute state of sub-division as to require several days before the waters will become transparent by deposition. In fine, as regards geological science, British Guiana presents a wide field for the geologist, and, in reference to the agriculturist, a great diversity of soil: the three leading features of which are first, the clayey alluvial soil of the coast, extending eight to ten miles inland; second, hills of silicious sand or gravel, which, with intervening fertile savannas, extend to the falls sixty miles inland; third, a rich primitive soil; and lastly, a mountainous country, with divers coloured ochres, indurated clays, and various mixtures of loamy earth and vegetable mould on beds of granite to a vast extent: all offering food, and the means of obtaining every necessary and comfort of life, to the hand of the industrious and skilful emigrant.

† MONTGOMERY MARIN.

CHAPTER IV.

MOUNTAINS, RIVERS, CREEKS, AND CATARACTS.—Physical Aspect.—Mountains—Falls—Cataracts—The Rivers Essequibo, Mazaruni, Cuyuni, Demerara, Berbice, and Corentyn—Principal Creeks.

WITH the exception of ranges of sand-hills, about 20 miles inland, and rarely more than forty or fifty feet above the level of the rivers and creeks (some on the west bank of the Demerara river are from one hundred to one hundred and fifty feet high, and nearly perpendicular), the whole country inhabited by the Europeans is perfectly flat and alluvial, bearing a striking resemblance to Holland and Flanders, and, like those countries, drained by canals and sluices, with lofty dams or mounds of mud, of considerable thickness, embanking each estate, and kept, together with the numerous bridges, in repair by the proprietors of the land in which they are situate.

As the country is ascended from eighty to one hundred miles inland, its fine savannas are interrupted by, in some places, a beautiful hill and dale territory, varied with high and frequently rocky land—presenting a strong contrast to the rather monotonous scenery which a dead flat possesses. Further southward, at the Coomarrow Fall (vide river Essequibo), the granite table-land belonging to the Cordillera rises to the height of six thousand feet above the level of the sea, at three hundred miles distant from the ocean.

The whole face of the coast of Guiana, from the Marañon to the Orinoco (except at Cayenne, where the chain of Macoupan forms a buttress to the ocean), is low, and generally bordered with a sandy flat, extending far out to seaward;—moreover, the various large rivers with which it is intersected, continually bring down from the upper country vast quantities of alluvial matter and sand, which on depositing, form a margin of low ground, covered with mangrove bushes, and appearing an inaccessible barrier at low water, but yet completely hidden at full tide. About five hundred paces within these mangroves, the low and level savannas commence, extending irregularly inland, and every where intersected by rivers, rivulets, and creeks, with a dense, luxuriant, and magnificent vegetation. The plantations are regularly ranged on either side of the great rivers or along the coast running parallel to each other, and extend like immense garden slips from the sea to the forest, in allotments of from five hundred to one thousand acres each.

The three principal rivers within British Guiana, are Essequibo, Demerara, and Berbice, with their numerous tributaries. The most westerly, the Essequibo, is nine miles west of the Demerara river, at its embouchure, from one side of the main land to the other is from 15 to 20 miles wide, and covered with many beautiful, low, and bushy islands, with shoals or sandy spits, extending from the north parts of the islets a considerable distance to seaward, and dividing the navigation into four separate channels. The most eastern island is termed *Leguan*, between which and the east side of the river is the *ship channel*, a wide passage, but much encumbered with shoals. To the westward is a long and narrow island, called *Wakenum*. To the north-west of the latter, and near the west shores, is a small islet, termed *Tiger Island*. A succession of other islands* (one termed *Fort Island*, about fifteen miles from the mouth) extend to the southward and further up the river, from twenty-five to thirty miles, between all of which there are channels; but from the extensive deposits of mud, it is difficult to state the soundings for any length of time, the depth of water on the whole coast being continually undergoing a change, according to the heaviness of the rains or the duration of the winds that blow on the shore. From Fort Island the Essequibo runs nearly south for about thirty miles, where it is joined by the large river Cayuni, which runs nearly south-west, afterwards north-west, through the province of Colombian Guiana, where it is supposed to join some of the interior branches of the Orinoco; a little further, or inland, the Cayuni is joined by the Massaruni river, which makes a considerable sweep to the north-west, and then returns, so as to form a large peninsula, enclosing lofty mountains and considerable creeks or rivulets; indeed, for more than 100 miles inland the breadth of the Massaruni is so great, and the wooded islands and creeks so numerous, that it has more resemblance to a lake than a river, and the influence of the tides is felt, at least in the Essequibo, sixty or seventy miles from the ocean; i. e. at Aetaca, the first fall. The enterprising Mr. HILLHOUSE, an engineer officer at Demerara, has recently explored the Massaruni river, and from his manuscript journal, as kindly lent me by the intelligent and active Secretary of the Royal Geographical Society, I glean the following description of the river and the adjacent country.

The distinguishing island feature of the Massaruni river commences at Caria island†; from this point, for nearly 100 miles, an innumerable string of islands divide the river into from five to ten different channels, in which space the two banks of the river are scarcely once visible together, and even one bank but seldom, the river continuing from three to four miles broad throughout the archipelago. The rapids commence between these islands, and at the fourth rapid (*Warinambo*) is a large open space in the centre of the river, which in the rains

* MONTGOMERY MAYER.

† Hog Island, the largest in the Essequibo. Its south end is called Hog Island.

† Caria was once a Dutch fort, and several plantations there have been, but now only to be traced by a few cocon trees.

⁹ 'has the appearance of a vast lake, and in the dry season that of a rugged rocky plain.*

Some of the falls are most difficult of ascent; the Caboory, for instance, is full thirty feet high, in four different ledges, and requiring an hour's hard labour to get over a space of about one hundred yards. The manner in which the falls are ascended is thus described by Mr. HILLHOUSE:—'The rapids do not run in one sheet over a level ledge, but force themselves through a number of fissures—large intermediate blocks of granite dividing the different shoots of the fall. At the base of these blocks is an eddy, into which the boat is forced, and becomes stationary, having no current either way. The crew then spring on the rock, and wade as far as they can find footing; by means of a long stout rope they then pull the canoe, or corial, into one of the shoots of the fall, where there is water enough to float her, and by main strength haul her up the ascent. They then take her out of the current, and lay her stern against the upper part of the rock, from the lower part of which they have thus ascended; and with her head right up the stream, at a given signal they all spring in, and, pulling with their whole might, endeavour to cross diagonally the different currents till they get into another eddy. This is the time of the greatest danger; if not active in seizing their paddles, the head of the canoe is taken by the current, and she drifts broadside down the fall and upsets. If not strong-handed also, she cannot stem the currents above, and goes down the fall stern foremost; the currents, at most of the rapids, run at the rate of ten or twelve miles an hour; and thus frequently many hours are consumed in gaining a few hundred yards.' On emerging from the almost interminable confusion of islands, creeks, and falls, and with the open and placid Massaruni river like a great inland lake running south and west, the eye of the lowlander is agreeably astonished with a sight of *Arthur's Tables* (the first visible point of the mountains of Merumah or St. George, the great central chain of Guiana), at an apparent distance of about sixty miles, and which would seem by a comparison with other parts of the chain to be six thousand feet above the level of the sea. At the thirty-fourth and last fall, named *Teboco* (and the extreme southern limit of Mr. HILLHOUSE's expedition), a lofty mountain was observed due south, with a conical peak at the north extremity, like the crater of a volcano, equal in height to Arthur's Table and named by the voyagers *Raleigh's Peak*: the Caruangu creek appeared to lead towards it, but was not explored. At the fall of *Teboco* the river narrows to one-third of its usual breadth, but widens again immediately after; and at Aramayka the cliffs of Maryhenrew became visible, about one thousand feet high, with perpendicular northern faces, with a remarkable detached peaked rock on the west face of the cliffs called the *Caribisce*, the legend of whose nation states it to be a man turned into stone for presumpt-

⁹ MONTGOMERY MARTIN.

* A melancholy accident occurred between these rapids and the Marshal's falls in the September of 1806. A party of gentlemen who were entertaining some friends, with a trip to the Massaruni cataracts, decided upon descending or shooting the falls at a dangerous part, which resulted in the boat being capsized, and the loss of seven lives. Those drowned were Captain BERRSFORD, (son-in-law of His Excellency Governor HISCOX), Mr. BOWLEY of R. M. Ship "Steady," Mr. STEWART, and Mr. CHRISTIE, of Georgetown, Mr. PARKS of Barbados, and two Convicts.

"tuously daring to scale the cliffs. At the point of Tloocro, the granite, for the first time, assumes a regular formation, and as the river is ascended is continued to be found in strata, at an angle of about five degrees above the horizon, its apex being nearly northward: it forms the base of all the cliffs, to a height of six hundred to one thousand feet, when a perpendicular and cubical formation of quartz is the general superstructure to one thousand five hundred feet higher. From a little above Aruauyka the chain of Mermaah or St. George is seen bounding the horizon, stretching to the north, where it appears highest, and terminates abruptly, in perpendicular fices, like the other branches of the chain. Near the extremity, in a clear day, a white curved line is seen extending from the summit to the base of the chain: this is the Mermaah creek forcing its way from the table land, a height of 1200 feet, to the valley of Massaruni.

At the fall of Maerebah navigation ceases: the creek winds about in the most opposite directions, and at every turn a large bold spit of white sand projects. The water, though perfectly transparent, is of a deep chocolate colour, and the sands are reflected in it of a bright claret or purple; the dark and still creek is fringed with a dense and gloomy foliage. While journeying in the midst of this gloomy valley a perpendicular cliff of 1500 feet high is suddenly seen, and, though distant, it appears as if it could be touched. Around are detached masses of rock, which seem abruptly torn from the gigantic walls of nature, and every two or three hours an immense block of granite must be passed in a deep channel, barely wide enough for the corial (canoe); then suddenly the channel widens into a shallow claret-coloured lake, 150 yards broad, but scarcely deep enough for the craft to swim in, and at last a capacious basin is entered, surrounded by a bold extensive sand-clay, as white as chalk, while the waters are as black as ink, without any perceptible current, though a fall of water is heard, and there is a foam like yeast on the surface, which remains the whole day without any visible alteration, save when a gust of wind coming down the fall, scatters the foam in flakes exactly resembling snow. At a distance a broken white line (the fall of Maerebah) of 100 feet high is seen struggling through a cluster of granite rocks, at the base of two quartz cliffs of mixed character.

Half way up the Maerebah fall, a small spring of clear, transparent, and slightly effervescent water, exists without the least ferruginous tincture, and issuing from a superior quartz formation, indicating, perhaps, that the extraordinary purple tinge of the waters of the creek is owing to a decomposition of granitic iron, in combination with a solution of astringent vegetable matter. The distance of Carulang creek (in which the Maerebah fall is situated) from the coast, is estimated at four hundred miles, including the sinuosities of the river; and the height above the sea, roughly calculated by the boiling of water at 203. Fahrenheit, above three thousand feet. A cataract above Maerebah, named Coomarow, is six hundred feet high, and exceedingly difficult of access; the greater part of the rise being an angle of forty-five, with an abrupt descent, and only ladders of roots. On the crest of the fall there is more than two feet of water in dry weather;

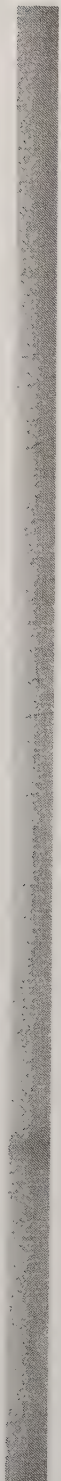
² 'but in the rains the rise is above ten feet, when the surrounding country is totally submerged. The table land above the Coomarow fall is evidently the extreme height of the horizontal granite formation, the laminae being here perfectly horizontal, and that of the bed of the creek in large plates or layers, of from one to three inches thick. The creek itself was one hundred yards broad and two feet deep, but completely choked with a sort of long grass, having stems as thick as a man's arm, dividing at top into a multiplicity of long threads, like the tails of horses, and completely covering the surface of the water.

The descent of the falls is accomplished with great rapidity. In less than one day the ascent of three may be got over, eighty or ninety miles being an easy day's journey. The middle channels are now chosen, where the current is most rapid, and the greatest body of water rushing to the coast. It requires four stout hands, two ahead and two astern, to give steerage way whilst shooting many crooked passages; that of Itacheek is a zig-zag of four turns, where not a few accidents have occurred to the small craft of the Indians.'

The Cuyuni for a considerable distance from its junction with the Massaruni, has also numerous falls and cataracts, and is dangerous at all times to ascend or descend. The principal falls, are the Acaya, Styra, Arrowak Matopa; the latter only a short distance from the Gold Fields of the British Guiana Gold Company.

³ 'The Demerara river situate to the south-east of the Essequibo, sixteen miles from Leguan island, and about fifty-seven miles westward of the bar of the Berbice river, in 6 deg. 40 m. north latitude, and 57 deg. 45 m. west longitude, nearly three miles broad at its mouth, and becoming narrower as it is ascended. The capital of British Guiana, in latitude 6 deg. 49 m. north, longitude 58 deg. 6 m. west, formerly called Stabroek, now called Georgetown, and is situated on the eastern bank of the river Demerara, being distant from the town of New-Amsterdam, Berbice, about 57 miles, and mouth of the river Essequibo about 20 miles.' The city of Georgetown, was formerly known as Stabroek, and consisted during the occupancy of the Dutch of a large street, with houses and lots on each side running from the river eastward to the bush, called the Brick-dam. The fast increasing trade and commerce of British Guiana, has caused the city of Georgetown to rapidly increase in population, extent, and improvement. It now contains about 30,000 inhabitants. No city in the West Indies can be compared with Georgetown for the beauty of its general appearance, well laid out streets, and substantial public edifices. The effects of the disastrous fires of 1864, which almost totally destroyed the stores of Water-street, have already disappeared. Broad new streets, stores, and buildings, have already sprung up with astonishing rapidity. The new streets are much broader than those existing before the fires, and have on each side a convenient shaded pathway for pedestrians. This city, occupying as it does a flat surface on the brink or margin of the river, is not seen to advantage when approached by sea or land. Viewed from the river, or opposite bank, it presents a long range of buildings of various sizes, chiefly stores and





warehouses with projecting stellings or wharves. The appearance of this tropical town from the lighthouse or other lofty building is singularly pleasing, giving the effect of a city in a garden, the houses and dwelling interspersed and surrounded by waving lofty palm-trees, and the varied and luxuriant foliage of the tropics, while the public buildings, with its shining dome, the Cathedral tower, and the spires of numerous churches and chapels, white, and glistening in the sunshine, piercing the summits of trees with which the city is so profusely ornamented, the towery masts of the shipping in the harbour, all combined has a most picturesque effect.

² The river is navigable by ships of burthen for one hundred miles up, as far as the cataracts, and affording an excellent harbour, capable of holding the whole navy of Great Britain; but unfortunately the bar will not allow vessels that draw more than eighteen or twenty feet to go over it. For thirty miles inland, along the banks of the Demerara, the country consists of extensive level meadows or savannahs; several sand-hills then appear, and, as the river is ascended, the country becomes more broken and mountainous.

The general direction of the river, ascending it, is south, with a slight inclination to east; the rapids, *in a straight line*, being not more than seventy English statute miles south by east of George Town, but one hundred and six by the course of the river. The difference of level between the water above and below the rapids is only twelve feet, and the river describes at them a very considerable arc of a circle, the chord of which is about one mile and a half. The rapids are descended safely in small canoes. Of its source we know, nothing certain.

The Berbice River, fifty-seven miles east of the Demerara, reaches the Atlantic in 6 deg. 24 min. north latitude. At its luxuriant-looking entrance, a little to the north of Fort St. Andrew, it is about three miles wide, with low cleared lands on both sides, covered with trees, and at a distance resembles a number of islands. In the middle channel lies Crab Island (so called from its numerous crabs), about one mile in circumference, with a spit of land running out to the north and south, dividing the river into two navigable channels; the east with 17 to 20 feet, the west with but 8 to 13 feet water. Eight miles north of Crab Island is a bar of sand, with only seven feet on it at low water, thus lessening the importance of the harbour.

There are several small creeks on the coast, but navigable only by boats; and a shallow flat extending along the shore renders it impossible for vessels except those of small draught, to approach within a league of the coast. Moderately sized ships can go up the river Berbice as far as Fort Nassau, which is at the distance of fifty miles in a straight line from the entrance; and vessels drawing fourteen feet water may, it is said, sail two hundred miles up the Berbice. The banks of the river are low, and covered with numerous plantations; as also along the sixty miles of sea-coast territory of Berbice the roads through which, close along the sea coast communicating with Demerara, are kept in excellent repair at the

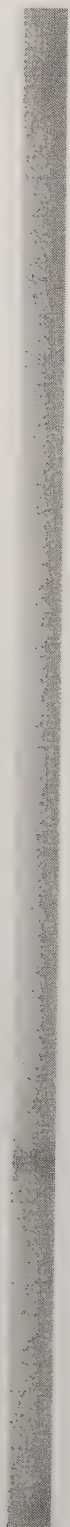
* expense of the individual proprietors through whose estates they pass, and may be said to be almost entirely formed of brick. The early Dutch settlers constructed a fortress fifty miles up the river, called Zelandia; but this was subsequently abandoned, and New-Amsterdam built on the side of the river Canjee, at its confluence with the river Berbice, two miles above Crab Island, on the east bank of the river, where it is intersected by canals, and has all the advantage of the tides.

The Canjee river, or creek, waters the Berbice district, and is navigable for schooners for fifty miles; but its course is then impeded by falls and cataracts. About forty miles below its head there is a creek, communicating with the Corentyn river, by which dispatches have been conveyed from Surinam to British Guiana by the Indians.

Sixty miles east of Berbice river lies the Corentyn, about three miles wide at its entrance, with the navigation obstructed by many small islands and quicksands. The islets are fertile, covered with trees, and having on the west side good clean anchorage in five fathoms. The west banks of the river, which form the eastern boundary of Berbice, are under British jurisdiction, where there are several estates in cultivation. Besides the foregoing, there are numerous other rivers, which in Guiana are termed *creeks*, though they would be considered large rivers in Europe. Among the principal is the Mahaica creek, about twenty miles to windward or eastward of the Demerara, between that and Abary creek; the Mahaicony is also on the east or windward coast, not far from the Mahaica; the Boerasire is on the leeward coast, near the Essequibo. Along the interior or southern portion of the colony there are numberless small rivers and creeks, intersecting wild and almost impenetrable forests, which, during the rainy season, empty themselves in torrents into the larger rivers, Essequibo, Cayuni, Massaruni, Demerara, Berbice, &c.; which latter rivers generally flow towards the ocean in discoloured streams at the rate of six or seven knots an hour.



8 *Vu* *u* & *R* *I* *u*



CHAPTER V.

THE INTERIOR OF GUIANA—Luxuriant Vegetation—Dense Forests—Victoria Regia Lily—The Elzeviria Regia Tree—The Canuti or Taguari Rock on the Essequibo—Indian Pictorial Writing—Atarapi, the Devil's Rock—Parata—Puri-Playa, a Remarkable Bay—Rorima—Purumama, the Great Fall of the River Parana—The Knudannama with the Parana—Esmeralda on the Orinoco—St. Gabriel—The Great Cataracts of the River Corentyn—Wahwah, the Cataract of General Sir Carmichael Smyth's Cataract—Habon and Christ's Cataract on the River Berbice—Shooting the Rapids and Falls of the River

⁵ 'When a traveller newly arrived from Europe penetrates for the first time into the forests of South America, he beholds nature under an unexpected aspect. He feels at every step, that he is not on the confines but in the centre of the torrid zone; not in one of the West India Islands, but on a vast continent where everything is gigantic,—mountains, rivers, and the mass of vegetation. If he feel strongly the beauty of picturesque scenery he can scarcely define the various emotions which crowd upon his mind; he can scarcely distinguish what most excites his admiration, the deep silence of those solitudes, the individual beauty and contrast of forms, or that vigour and freshness of vegetable life which characterize the climate of the tropics. It might be said that the earth, overloaded with plants, does not allow them space enough to unfold themselves. The trunks of the trees are everywhere concealed under a thick carpet of verdure; and if we carefully transplanted the orchidea, the pipers and the pothoses, nourished by a single courbaril, or American fig-tree,* we should cover a vast extent of ground. By this singular assemblage, the forests, as well as the flanks of the rocks and mountains, enlarge the domains of organic nature. The same lianas which creep on the ground, reach the tops of the trees, and pass from one to another at the height of more than a hundred feet.'

⁶ 'A vine called the bush-ropo by the wood-cutters, on account of its use in hauling out the heaviest timber, has a singular appearance in the forests of Demerara. Sometimes you see it nearly as thick as a man's body, twisted like a corkscrew round the tallest trees, and rearing its head high above their tops. At other times, three or four of them, like strands in a cable, join tree and tree, and branch and branch together. Others, descending from on high, take root and as soon as their extremity touches the ground, and appear like shrouds and stays supporting the mainmast of a line of battle ship; while others, sending out parallel, oblique, horizontal,

⁵ Humboldt.

⁶ Wats.

* *Ficus nymphaeifolia*.

¹ 'and perpendicular shoots in all directions, put you in mind of what travellers call a matted forest. Oftentimes a tree, above a hundred feet high, uprooted by the whirlwind, is stopped in its fall by these amazing cables of nature; and hence it is that you account for the phenomenon of seeing trees, not only vegetating, but sending forth vigorous shoots, though far from their perpendicular, and their trunks inclined to every degree from the meridian to the horizon.

Their heads remain firmly supported by the bush-ropes; many of their roots soon reflex themselves in the earth, and frequently a strong shoot will sprout out perpendicularly from near the root of the reclined trunk, and in time become a fine tree.'

² 'The coasts of Guiana, washed by the waves of the Atlantic Ocean, covered with mangrove and *Courida* bushes, and present a verdure of perpetual freshness, forming as it were a seam or fringe to the rich carpet behind. They are enlivened by numerous flocks of the scarlet Ibis, the white Egrette, and the splendid Flamingo, which, disturbed at the approach of an intruder, soar into the air, or perch on the summits of the trees. Where cultivation has not stamped its seal on the landscape, the marshy plain changes to savannah, resembling the meadows of Europe, watered by rivers and limped streams interspersed by groups of palms or tufts of trees. On ascending the great rivers, which have been happily called "the veins of the country," we find them covered with verdant isles; and as we approach the primitive forests the landscape assumes the features peculiar to the tropics.

The dense and almost impenetrable forest of the interior offers inexhaustible treasures, not only for architecture in all its branches, but likewise for the manufacture of furniture, and for many other purposes that minister to the restoration of health or to the comfort and luxury of man.' The luxuriance and grandeur peculiar to Guiana (as described by the late Sir R. SCHOMBURGK)* is ¹⁴ 'nowhere more strikingly exhibited than in the magnificent VICTORIA REGIA, no doubt one of the most remarkable productions of the botanical world.

During our ascent of the river Berbice, we met with difficulties of no common nature. The river being broken up by numerous rapids and cataracts our progress was but slow, and, having been deserted by a party of Wacawais, we could not muster a sufficient number to man our canoes, and had therefore to abandon one. After we had passed the cataracts, which extended for nearly fifteen miles in almost an uninterrupted line, the river narrowed considerably, and numerous trees, which from age, or the undermining effects of the current, had fallen across, disputed our advance, so that we were obliged to cut our passage through. In order to increase the obstacles many of our Indians were unfit for work in consequence of indisposition, and so tardy was our advance, that on the 1st January, 1837, and five weeks after we had departed from New-Amsterdam, we were only

³ WATERTON.

² SCHOMBURGK.

¹⁴ SCHOMBURGK's, Interior of Guiana.

* The following description of the Interior of Guiana, and continued almost to the conclusion of the present chapter, is taken from the valuable work published by Sir R. SCHOMBURGK in 1841, being a narrative of his expedition to the Interior under the auspices of the Royal Geographical Society of London and Her Majesty's Government.

" within one hundred and twenty miles from the coast. A succession of adverse circumstances had taken place since we undertook the second expedition into the interior of Guiana, and difficulties had beset us from the outset; the entrance of the new year was therefore well calculated to enhance the feeling of disappointment.

Such thoughts were passing in my mind when we arrived at a point where the river expanded, and formed a smooth basin on its eastern bank, while the current directed its course along the opposite shore. Something on the southern point of the basin attracted my attention; I could not imagine what it might be, and urging the crew to increase their rate of paddling, in a short time we were opposite to the object of curiosity—a vegetable wonder! All calamities were forgotten; I felt as a botanist and was rewarded. A gigantic leaf, from five to six feet in diameter, salver shaped, with a broad rim of light green above, and a vivid crimson below, rested upon the water; quite in character with the wonderful leaf was the luxuriant flower, nearly four feet in circumference, and consisting of many hundred petals passing in alternate tints from pure white to rose and pink. The smooth water was covered with them, and I rowed from one to the other, constantly finding something new to admire. When the flower first opens in the morning it is white, with pink in the middle, which spreads over the whole flower, as the sun in his daily course proceeds towards the western horizon; and is generally found the next day of a pink colour. As if to enhance its beauty, it is sweet-scented, and chiefly so in the morning when it first opens: but even the heat of the day does not entirely overcome its fragrance.*

An account of this plant having been transmitted to England, Dr. LINDLEY found it to be a new and well marked genus; and Her Majesty having graciously consented that it might be dedicated to her, gave permission that it should be known by the name of

VICTORIA REGIA.

The most exquisite species of every type in Flora's kingdom appears to belong to the equatorial regions. The addition of a genus of indigenous plants at once so beautiful and remarkable, has proved of the greatest interest, and adds to the characteristic features of the equinoctial zone, already distinguished by Palms of majestic aspect, and the gigantic representatives of the Banana tribe, the Musas and Heliconias.

The richness and grandeur of which I speak, is not restricted to the Monocotyledons, but refer likewise to the Exogens. What can be more noble than the sight of a forest interspersed with trees of the Laurel tribe, the Lecythideæ, the Anonaceæ, the Caesalpincæ, and Mimoseæ with their airy leaves and splendid clusters of golden and purple flowers? Of such did the vegetation consist on the sides of the river Parima; above the Catawaet Purumama. A Bignonia with digitated leaves, and large white odoriferous flowers, the

1) See *Senoumarou's*, Interior of Guiana.

* Dr. LINDLEY, with his well known liberality, published a botanical description for private distribution, accompanied by a representation of the plant, half its natural size; and since my return to Europe, Mr. BAURMOUGNEY made, under my superintendence, a full sized drawing, which is now

"gigantic Urania, the Iacaranda with its double-feathered foliage and flowers of a beautiful azure blue; but above all, a tree allied in its botanical character to the Amherstia, increased the picturesque effect of the primeval forest, which extended beyond its banks.

This noble tree, which I saw here for the first time, is distinguished by that light and airy trembling foliage, which is so peculiar to the delicately pinnated leaves of the tropics, and casts a charm over the landscape, which Baron de Humboldt has already observed, cannot be conveyed by any of our European trees with pinnated leaves. Its branches almost unite, so as to form a verdant arcade, and the elegance of its clusters of white flowers, tinged with rose colour, and its large stamens of a bright crimson, add to its lovely appearance. These clusters existed in profusion, and their dazzling colour was well contrasted with the feathery dark green foliage. The young leaves, of light green, hang down as if in fringes, and the long pods, like velvet in texture and of a crimson colour, gave additional beauty to this splendid tree, and afforded the painter a subject for the exercise of his pencil, equally interesting and difficult to execute. It proved to be a genus as yet unknown to botanists; and those sacred feelings which recur to us, even in the midst of the magnificent scenery of the tropics, those feelings connected with all that belongs to home, prompted me to adopt the usual practice of botanists, and like them, to name it after an individual, distinguished for her exalted situation, and patronage of science: after her, who now shares the throne in my native land, and to whom the subjects of Prussia have transferred the love which they bore to their late Queen Luise. This exquisite tree, therefore, will henceforth bear the appellation of

ELIZABETHIA REGIA,

and vies in beauty with one of the most splendid productions of the Eastern hemisphere, the noble Amherstia, and the no less distinguished Brownea, the rose of the Western tropical regions.†

THE COMUTI, OR TAQUIARI ROCK.

LATITUDE 4 DEG. 53 MIN. N. LONGITUDE 58 DEG. 53 MIN. W.

In about the fifth parallel of latitude, two ranges of mountains, the Akaiwanna and Twasinki, project into the river Essequibo on each side, and cause its general direction for about six miles to assume the form of an S. In this distance are three falls, the most formidable of which, named Yukurit or Cumakatoto, is caused by a dyke of stratified granite, crossing the river in a north and south direction, over which the water, hastened by previous rapids, and narrowed by projecting rocks, precipitates itself with

11 SCHOMBURGK'S, Interior of Guiana.

† ELIZABETHIA princeps in *litteris*, and in the enumeration of SCHOMBURGK'S Guiana plants, by GEORGE BENTHAM, Esq., Journal of Botany, vol. ii. p. 12. The discovery was made and described when Her Majesty the Queen of Prussia was still Princess Royal; but as the drawing and description of it have not yet been delivered to Her Majesty, it cannot now be pre-empted without changing the specific name so as to be in accordance with Her Majesty's new nomenclature. A second species of the genus ELIZABETHIA, which fringes the banks of the wide rivers in Guiana, has clusters of scarlet flowers.



1. The Camp of Tequira Rock.



¹⁴ violence. The surrounding mountains recede, and form an amphitheatre, affording a highly picturesque scene.

The Comuti, or Taquiari mountains, the southernmost of this group, have received their name from a remarkable pile of large granitic boulders, so placed as to resemble a water-jar, called Comuti by the Arawaak Indians, and Taquiari by the Caribs. Circumstances prevented us from ascending the hill during our first expedition up the river Essequibo; but when our further explorations led us a second time up that stream, we halted at the foot of the Comuti mountain, and commenced its ascent. When we had climbed for about half an hour, we arrived at a comparatively level place, overgrown with numerous Saperi trees. The hill became steeper, and we soon after reached the granitic pile, which I give its name to these hills, and which is about a hundred and fifty feet below the summit. We were, however, told by our guides, if we ascended somewhat higher we might attain a huge block, from the top of which the view was much more extensive. By means of two ba-brones, the name given to the lianas, or large creepers, which were trailing against the rock, and to which sticks were tied in a horizontal direction, we reached, as by a ladder, the top of the block, and one of the loveliest prospects was stretched out before us.

So enchanting was this view, that I was at a loss where to commence in order not to overlook any part in the lovely picture; but as if by a charm, my eyes were fixed for some time on two gigantic piles of granite which rose before me, perhaps the monuments of some convulsion of nature. What are the famed piles of the Hartz mountains, what the celebrated pedestal of the state of Peter I, if compared with these which I now saw! On the left rose the pile, called by the Indians, Comuti, consisting of three huge blocks of blue granite; the second seated upon the lower one by only three supporting points; the third has entirely the shape of a large jar, and is covered by a fourth rather flat. These two latter have been likened by the Indians to a jar with its cover, and so striking is the resemblance, that it does not require much vivacity of imagination to detect it, nor does it lose its resemblance by being viewed from the river or its immediate vicinity. The second pile, of pyramidal shape, was on our right, and is called Kamai. We stood on the third pile, which, by measurement, I found afterwards to be one hundred and sixty feet high. The two other piles appeared inaccessible; but their height no doubt surpasses the one we measured. At our feet extended a beautiful landscape; to the south the Mukurapon mountains arrested the eye; to the eastward, the abrupt peak of the Maccari, resembling the gable end of a gigantic building, was not to be mistaken, for the sun's rays were reflected on its white rocks; to the south-west meandered the river Siparuni, while at our feet, the Essequibo, dividing into numerous branches studded with islands and rocks, lost itself amidst the dense forest. The larger cataracts were perspicuous by their white foam; and the uproar caused by the turbulent waters of the one at our feet was even audible at the height at which we stood; it sounded like breakers on a lee shore. The hills of Akessigono were opposite to us, a dark cloud, which dissolved at intervals, on their Asuru peak, heightened

¹⁴ "the effect, and a column of smoke pointed out the Indian habitations, which we had left the preceding day. The Arissaro hills, distant upwards of fifty miles to the north, appeared as if enveloped in a veil.

We fired our muskets while we stood on the rock, and were answered by the guns of the party which had remained in the camp below; their report reverberated through the mountains, but our's appeared almost lost, there being no object to return the sound. The echo at the foot of mount Comuti is beautiful, and perhaps one of the most distinct in the river Essequibo. The sun had set when I was obliged to leave "the giants of the hill," as Mr. WATERTON, in his amusing "Wanderings," has so appropriately termed these heaps of granite.

So attractive and charming was the view, that on my return in 1839, from my last expedition, I gladly availed myself of the opportunity of revisiting these interesting piles, in order once more to enjoy the prospect which they afforded. On our ascent, one of the Carib Indians who accompanied me, pointed out, on a large granitic block, some Indian "picture writing," which we had not previously observed. Its lines were more regular, and there was more symmetrical arrangement in it than I had generally observed in these sculptured figures. It bore a resemblance to the sculptures found to the eastward of Ekaterinburg, in Siberia, near the sources of the rivers Irbit and Pishma, tributary of the river Tura; and at Dighton, near the banks of the Taunton river, twelve leagues south of Boston in the United States of America. The granite on which they were engraved was decomposing, and the figures much effaced; I took however a drawing of a compartment of the rock.

A mystery not yet solved hangs over these sculptured rocks. Whatever may be their origin, the subject is one of high interest, and demands the full investigation of the antiquarian and historian. I have myself traced these inscriptions through seven hundred miles of longitude, and five hundred of latitude, or scattered here and there over an extent of three hundred and fifty thousand square miles. I have copied many of them, and although they do not denote an advanced state of civilisation, in my opinion they have a higher origin and signification than that generally ascribed to them, namely, the idle tracings of hunting nations. It is remarkable that the situation of those which I have seen was generally near cataracts and rapids.* The Indian races of the present day can give no account of their origin; some ascribe them to the good spirit, others to their forefathers; and the Taruma Indians, on the river Cuyuwini, a tributary of the upper Essequibo, gave me, in answer to the question, who had made the figures which I saw sculptured on some blocks of greenstone in that river? "that women had made them a long time ago."

In the general uncertainty which prevails with regard to these monuments of by-gone races, it was particularly gratifying to me to find during my last expedition, some sculptures which afforded a clue to the date when

¹⁴ SCHOMBERGHE's, Interior of Guiana.

* In a paper which I addressed ten years ago to the Antiquarian Society of London, I gave an account of some sculptured rocks which are near a cascade in the Island of St. John's, one of the Virgin Isles. They closely resemble those at that place of Waraputa, on the river Essequibo. The island of St. John's is known to have been inhabited by Caribs.



11. The Awaripa, or, the Devil's Rock.

"they were executed. Among the numerous figures which we found carved in hard granite blocks at the Ilha de Pedra, on the Rio Negro, and about twelve miles west of Itacandana, or Pedrero, we likewise observed the representation of two vessels under sail; the smaller with two masts, the larger not unlike a galleon; there remains therefore no doubt that these pictures were made at a later period, and after the discovery of the Amazon, when the vessels of the *Conquistadores* floated on the mightiest stream in the world. The other figures are representations of birds, animals, and men. Among others there is a group of thirteen men arranged in a row as if dancing; and they possibly relate to an event which caused great rejoicing, perhaps the first arrival of Europeans on the Amazon; little thinking that the destruction of their own races would be consequent on the landing of their European tyrants.

The Indians of the present day, in the vicinity of Pedrero, admit the antiquity of these figures, and say, that they were engraved by means of constant friction with quartz pebbles. Such may have been the case; but our attempt to produce such results proved fruitless, as indeed did our endeavours to produce fire from two sticks, though it is done with comparative ease by the Indians: unwearied patience may have accomplished it. These figures, it should be remarked, are not so deeply cut as those on the Corantyu, or at Waraputa, on the Essequibo.

ATARAIPU, THE DEVIL'S ROCK.

LATITUDE 2 DEG. 55 MIN. N. LONGITUDE 59 DEG. 45 MIN. W.

Disappointed in two journeys in our wish of attaining the central ridge of mountains which the river Essequibo is supposed to take its rise, we determined, when the expedition which started in September 1837, from Georgetown, reached the confluence of the river Kaiwa with the Rupununi, to ascend the former, and its tributary the Guidaru, and by crossing the savannahs, try to gain one of the rivers which flow from the west into the upper Essequibo. An opportunity was thus afforded to us of seeing another of those geological phenomena which add to the picturesque and magnificent scenery of Guiana, namely, the Ataraipe, a natural pyramid, which rises on the western bank of the river Guidaru, and is estimated at a height of nine hundred feet above the river.* There was no account of any of the travellers who preceded me having reached this remarkable rock. Doctor Huxcock saw it from a distance, but did not approach it within twenty miles; and its situation has been so erroneously given, that there is a difference of eighteen miles of latitude between its assumed and real position.

On reaching the rapids called Carabiru by the Caribs, we encamped, and accompanied by a party of Indians, I struck off in a westerly direction, through woods so dense, that we were at times obliged to clear our path with cutlasses. As we forced our way through the wood, we were greeted from time to time by the finest perfume, which we traced to a liana, or creeper, and one of the bush-rope vines of the colonists. This sweet-

* SCHOMBURGK'S, Interior of Guiana.

* Guidaru signifies in the *lingua geral* a kind of war-club.

"smelling plant was *Schnella brachystachya* (Benth.) with white flowers, of which the largest petal was spotted with pink, growing in voluminous clusters, its stems twisted and contorted in so remarkable a manner as well to deserve the name of bush-rope. To describe the various ways in which these twists and contortions take place would be difficult; sometimes the stem is delicate as a ribbon, while at others it presents a bundle of stems so closely twined together as to make it no easy matter to separate them with an axe. A troop of little Sackowinkis, or squirrel monkeys (*Callithrix seimensi*), some of the most beautiful and most active of their kind, leaped with the agility of a true squirrel from branch to branch, and alarmed by our appearance, uttered their plaintive call, resembling more the voice of a bird than an animal, and then hastening away, were soon hidden among the thick foliage of the large forest trees.

We had scrambled for about two hours through the woods when the nature of the soil changed, and in lieu of a vegetable mould, shelly pieces of rock were lying heaped upon each other; among them grew numerous plants of the pine-apple tribe, and I refreshed myself with the fruits of the *Bromelia penguin*, the date of the West Indies, a plant which I saw for the first time in Guiana, although so common in the former place. We ascended a mass of granite about four hundred feet in height. Wherever a layer of black earth had accumulated a species of *Clusia* had fixed its roots in the shelves of granite, surrounded by numerous *Orchidæ*, of which an *Epidendrum*, with large umbels of bright pink flowers was the greatest ornament; *Oncidium*, *Monochanthus*, and *Cyrtopodium* grew there in voluminous clusters. Several Cacti, with only a few inches of soil, in which they could take root, raised their huge limbs in the form of a Candelabrum, while a more humble station satisfied the curiously formed *Melocactus*, or Melon-thistle, which, like the *Bromelia penguin*, I here met with for the first time. We crossed some hollows, which appeared to have been scooped out by the frequent torrents caused by the tropical rains, and soon after reached the northern side of the hill, when the magnificent natural pyramid of Ataraipu burst on our sight, raising its bare head from an abyss of dense foliage, which spread around in all directions at its foot. The base of this mountain is wooded for about three hundred and fifty feet; from thence rises the mass of granite, devoid of all vegetation, in a pyramidal form, for about five hundred and fifty feet more, making its whole height nine hundred feet above the Guianan, or thirteen hundred feet above the sea. We ascended the summit of Hutu-cubana, as the Indians called the hill on which we stood, in order to have a more extensive view. At the distance of two miles the remarkable mass of granite appeared to be one of these eminences which the poet says,

"Like giant stand
To sentinel enchanted land."

In the distance, mountains rose above mountains, partly bare and rocky, partly wooded, and forming an amphitheatre. To the west I recognised the blue outline of the Canuku chuia, the remarkable Saeneri mountains

" with their conical peaks, the dome-shaped Vivi, and the Dororu rising out of the vast savannahs, the scene of my former wanderings in 1836. Then the eye again reverted to that monument of unnumbered ages. What changes may have occurred since the word which called it into existence was pronounced? Had the earthy substance, which probably once surrounded it, been washed away by tempests and torrents, and left nothing but the column impervious to the tooth of time? Had it risen out of the bowels of the earth; the child of that earth's convulsion? Whatever intermediate cause may have brought it forth, it is a wonderful monument of Him who is Almighty!

As I gazed around on this romantic and picturesque scene, and on this striking pillar now lighted up by the rich glow of a tropical sunset, my thoughts naturally reverted to the companions and incidents of my preceding journey, and I could not but look forward with hope, not unmingled with anxiety, towards the distant south, the object of my present expedition.

The Sacraeri mountains, which form such a striking feature in the landscape when seen from Huta-cubana, rise, an isolated group, on the western bank of the river Rupununi, in the approximate latitude of 2 deg. 50 min. north, and longitude 59 deg. 23 min. west. They are conical and rugged, but well wooded at the base. They are probably the Sierra Uassari* of ancient maps; the Indian tribes, however, living in their neighbourhood call them Sacraeri from a species of bird. At their eastern extremity is a pyramidal mountain, the top consisting of granite. Its shape is so peculiar that it cannot fail to attract attention; it is quite isolated, and called by the Wapisianas Ochlopan, or Dochlopan.

The height of the north-eastern peak of Sacraeri, according to some trigonometrical operations which I made in the savannahs in the vicinity of the Wapisiana village of Kuiraton, is two thousand one hundred and sixty feet above the savannah, and two thousand eight hundred feet above the sea; and that strange mountain, Dochlopan, is one thousand and seventy feet above the savannahs. They appear much higher, but this may arise from their standing entirely isolated. Their formation is peculiar, and they are easily recognised at a great distance by their three peaks. At their western foot flows the small river Saraou-auri (Saruru, Sarauri in maps), between which and the Rupununi there is a path, or portage, by which the Indians keep up a communication between the Rupununi and Takutu, dragging their corials from the former, a short distance over land to the Saraou-auri. This portage was traversed as early as 1739 by NICHOLAS HORTSMAN.† The stream has received its name from a species of Palm (*Astrocaryum Janari*) which the Wapisianas call Saraouauri, and is a tributary of the river Takutu, which flows into the Rio Branco.

* SENOUMOUN'S Interior of Guiana.

† Humboldt's Pers. Narrat., vol. vi, p. 518. † Humboldt's Pers. Narrat., vol. v, p. 490.

PIRARA.

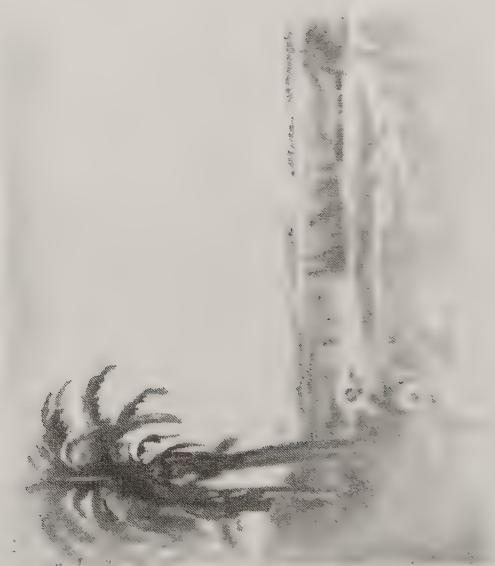
LATITUDE 3 DEG. 38 MIN. N. LONGITUDE 59 DEG. 16 MIN. W.

14 Centuries have elapsed since the supposed existence of an extensive auriferous district fired the imagination of all Europe, and found ready belief, at a period when chivalrous enterprise seems to have been succeeded by a thirst for adventures in the newly found part of the world.

The marvellous discoveries and narratives of the first conquerors had already prepared the minds of the credulous for the greatest wonders, and disposed them to admit the accounts given of a still more recently discovered country, called *El Dorado*, the gold-coloured capital of which was built upon a vast lake, surrounded by mountains so impregnated with the precious metals, "that they shone with a dazzling splendour." This picture excited the desires of thousands, and by alluring them to follow the phantom, led them to encounter dangers, privations, and a waste of human life unparalleled in the history of imaginary schemes.

The mania for the discovery of these auriferous regions was not confined to Spain, it spread equally over England and Germany, and such was the influence of this seducing picture, first sketched by rumour, and then coloured by imagination, that like another *Seylla* and *Charybdis*, the more victims it drew into its vortex, the more were found to embark in the plans laid for its attainment. If we look at that splendid army of adventurers, who to the number of several thousands were beguiled by the persuasive *DOMINGO DE VERA*, and his highly wrought description of the boundless riches of the great lagoon with auriferous banks; the opulent city of *Manoa*, over which reigned a grand *Patiti*, which was covered with gold dust, and the golden roofed palaces of which could be seen afar off, while hundreds of canoes floated on the bosom of the surrounding waters, or lay stranded on their glittering sands—or if we turn to the pages of British history, and there find recorded how, deceived by these reports and his thirst for adventures, the chivalric *RALEIGH* led forth from England's shores several armaments with the lofty object of conquering the golden capital of *El Dorado*, we everywhere meet with a series of disasters, and read a continued narrative of human privations and sufferings. It is related of those deluded adventurers, whom the flattering accounts of *DOMINGO DE VERA* induced to leave their homes, that only two or three returned to Spain. Disappointed in his undertakings, and assailed by his commander with reproaches, *KERMIS*, the faithful follower of *RALEIGH*, with his own hand ended his career; and the accomplished *RALEIGH* himself, he whom his contemporaries called "the gallantest knight that ever was," paid the forfeit of his illusions with his life upon the scaffold. What wonder therefore that the fable of *El Dorado* was reprobated as a device, invented by Satan to lure mankind to destruction!

The existence or non-existence of the *Dorado* and lake *Parima*, continued to occupy the imagination and attention of adventurers until the close of the last century, at which late period (1766 and 1777) *DON MAXUEL CENTURION*, the Governor of *Santo Thomé*, sent an expedition from the *Orinoco* in search of the *Laguna de Parima* and the city of *Manoa*; enterprises equally marked by the endurance of the greatest hardships, and the sacrifice of human life.



¹⁴ 'In this universal search for El Dorado, two places appear to have more particularly attracted general attention; namely, the regions along the eastern slope of the Andes of Cundinamarca (New Grenada) which have been considered as the birth-place of the fiction, and that part of Guiana, which lies between the river Rupununi and the Rio Branco. A large inland lake, "another Caspian Sea, as RALEIGH expresses himself, was the constant companion of the golden city, and whether this locality referred to the Andes, south of Mexico, or to Guiana, we find it surrounded by water. Thus when the space where El Dorado was situated was supposed to be in Guiana, the name of the river Parima, and the inundations to which the flat country or savannahs were subjected, through which the rivers Parima, Takutu, Xurumu, Mahu, and Rupununi, take their course, gave rise to the fable of the white sea, or Laguna del Parima or Rupununi. Captain KEYS, who at the expense of RALEIGH undertook a second voyage to Guiana, identified the locality of Dorado with this lake, which, as he imagined, contained the town of Manoa.

The researches of the most eminent traveller of our age, to whom every physical science is indebted for his contributions, the celebrated DE HERMOLLE, proved by deep reasoning, founded either upon personal experience, or upon the inspection of every document which related to this lake Parima, that it no longer existed, and with its erasure from our maps vanished the last vestiges of that delusive bubble, El Dorado.

The errors of geographers respecting a great interior lake having been corrected and explained by DE HERMOLLE's able pen, the long entertained and pleasing idea of a surrounding country, rich in gold, has been abandoned in our enlightened times; yet such is the charm of these illusions over which the description of Sir WALTER RALEIGH has spread so romantic a hue, that although we are now aware of their exaggerated tone, we yet read them with avidity and interest. How much that interest increases on approaching the classical soil, which KEYS described as the site of El Dorado, that traveller alone can conceive, who treads a *terra incognita* connected with such associations.

In the course of our first expedition into the interior of Guiana, we landed on the 5th December, 1835, at Wai-ipurari, or Marocco, a small inlet which the river Rupununi forms in 3 deg. 42 min. N. latitude. The village of Pirara, inhabited by Macusi Indians, is about eleven miles distant from this inlet, and is situated near a lake, through which the river Pirara directs its course. The occurrence of this name, its situation on a lake, and the extensive savannahs, or plains, which, according to the information of the Indians, surround the village, brought the accounts of KEYS, HORTSMANN, and SANTOS, of the locality of the lake Parima to our recollection, and persuaded that we stood on the borders of that enchanted land, we prepared for our excursion to Pirara with increased interest.

On leaving the river Rupununi, we passed over undulating ground, thinly covered with Malpighias shrubs of stunted appearance, and bright yellow or pink flowers. We turned round a small hillock, and before us

"was one of those groves of *Mauritia* palms, which give to the savannahs of South America so characteristic an appearance. This graceful tree, with its fan-shaped leaves, alone afforded the scanty shade to be found in those arid places, while it contributed to the picturesque scene before us. The different tints of the savannah, which extended to the Pacaraima mountains, might have been compared to a sea of verdure, which illusion was powerfully increased by the waving motion of the deceptive mirage. Isolated groups of trees rose like islands from the bosom of this sea, and a few scattered palms, with their tall trunks appearing like masts in the horizon, assisted in conveying to our imagination the seducing picture of the Laguna de Parima, with its hundreds of canoes floating on its bosom. Towards the west, where the savannah was bounded by the horizon, we observed some Indian dwellings, and having crossed a small stream, we soon after entered a village consisting of fourteen huts, and inhabited by eighty Indians of the Macusi tribe. It was situated upon rising ground, affording an extensive view over the savannahs to the chain of mountains known to geographers under the name of Pacaraima. At the foot of this small elevation is a lake, which extends east and west for about three miles, and which, at the period when rain seldom falls, is almost covered with rushes; only here and there presenting patches of water. It is however an inland sea, when, during the tropical winter, the rivers overflow their banks. Three islets rise from the middle of the lake, and a small stream flows through it, which has its source somewhat south of the village. The lake is called Annucu; the group of islands, the *Islas Ipomucena*, described by SANTOS; and the stream, the Pirara*, names so closely associated with the fable of the Dorado and the Laguna de Parima, that we looked with redoubled interest on the landscape before us.

The vast savannahs, on which Pirara is situated, are encompassed by the Pacaraima mountains to the north, the Canuku and Carawaimi mountains to the south, the thick forests of the Essequibo and isolated mountains to the east, and the mountains of the Moejahai, and branches of the Sierra Parima to the west; and, according to a superficial computation, cover a space of fourteen thousand four hundred square miles. The geological structure of this region leaves but little doubt that it was once the bed of an inland lake, which by one of those catastrophes, of which even later times give us examples, broke its barriers, and forced a path for its waters to the Atlantic. May we not connect with the former existence of this inland sea the fable of El Dorado and lake Parima? Ages may have elapsed; generations may have been buried and returned to dust; the nations who once wandered on its banks may be extinct, and exist even no more in name; still the tradition of the lake Parima has survived these changes, and transmitted from father to son, imagination has connected it with El Dorado; while these accounts, carried across the Atlantic, have caused those adventurous expeditions, and that sacrifice of human lives, to which allusion has already been made.

* SCHOMBURGK'S, Interior of Guiana.

* The Macusi Indians call the ferrugineous conglomerate, which forms extensive strata in an east and west direction on the savannahs, Pirara, from which the river and village have received their names.

Three years had elapsed since my first visit, when in the pursuit of discovery I again approached Pirara, and remarked with surprise and pleasure the change which had taken place in the appearance and number of dwellings which composed the village. I counted upwards of thirty Indian huts, the highest place being occupied by a building somewhat European in construction, the walls of which, plastered by the red ochreous clay of the savannahs, and the roofs with gable ends neatly thatched with palm leaves, formed a strong contrast to the surrounding dome-shaped huts of the Indians. Another building, a little to the east of the former, and of larger dimensions, but of similar construction, was in the course of erection, and men, women, and children, appeared equally eager to lend an assisting hand for its completion. This house was intended to be dedicated to the service of the only true God, the former for the dwelling of their missionary, to whose arrival and residence among them they appeared to look forward with great delight. It was pleasing to observe their zeal in such a good cause, and the more so when I considered that the light of Christianity had not yet been diffused among them. Their wish to become Christians had been awakened by the temporary visit of a missionary from the mission at Bartika Point, at the confluence of the Massaruni with the Essequibo, who, as they expressed themselves, only opened the sacred book, which the white man possessed, without telling them of its contents. In anticipation that their request for a missionary to come and settle among them would be ultimately granted, they had begun to erect these houses according to their idea of the mode of building among white people, and twenty-nine of their tribe had been selected to proceed to the coast-region, in order to assist in conveying the missionary to his new station.

At my first visit I had formed a predilection for Pirara, not only from the historical interest connected with it, but likewise from its picturesque situation between the two mountain chains of Pacaraima and Canuku, and not least from the kind hospitality of its untutored inhabitants. It was not surprising, therefore, that I should select it partly for my winter quarters, when I resolved to remain, during the rainy season of 1838, in the interior of Guiana. I have not regretted my stay in Pirara, although my comfort was alloyed by sickness, for it has given me ample opportunity to increase my researches in natural history, and to study the character and manners of that interesting race, among whom I was a guest, the Maecsi Indians. How frequently have I been sitting near those three Palm trees,* which we see in the picture occupied by a Maecsi family, and allowed my eye to range across the village of motley architecture, and the enchanted lake with its verdant isles, until it has been arrested by the chain of mountains clothed in bluish tints, and the play of extraordinary refractions over a soil strongly exposed to the full influence of a tropical sun. The course of the Mahu, which river emerges from the mountain chain at the distance of twenty miles from Pirara, between the peaked mountains of Cuenyé, a little to the right of our group of Maecsis, and the truncated hill Tupunaghé, was then designated by a whitish mist, appa-

* See *Journal*, Interior of Guiana.

* The Maecsis call this species of palm, Yawailé, it is an *Astrocaryum*.

recently hovering over the trees which fringed its banks; or indeed the mirage adopted frequently such an aqueous appearance, that the river itself might have been fancied to be suspended in the air, and to flow over the tops of the trees. At other times the mountains appeared so close, that every tree in the tufts of wood, which partly covered them, might have been counted, and their distance might have been supposed to be half a mile in lieu of twenty. I shall never forget the splendid spectacle I witnessed one evening after darkness had set in, when, towards the north, the whole horizon was illuminated; for the grass on the savannahs, which had been burning for the last four days, had communicated the fire to the mountain chain, which now blazed for a distance of many miles. A thunder-storm approaching from the north-west, much enhanced the sublimity of the scene, and mingled its forked lightning with the fiery columns, which, as if arranged in battle-array, seemed to storm the heights of the Sierra; and the vivid lightning and the rolling of the thunder were the batteries employed for the onset.

While residing in this place I was present at the arrival of the first protestant missionary among the Indians in the interior of British Guiana, and the joy which it caused to those who were to be confided to his spiritual care, although they were as yet walking in perfect darkness, was a proof of their earnest wish to become Christians. The efforts of the missionary were crowned with success, and I have seen from four to five hundred Indians assembled in the chapel; and although in the commencement they attended in their naked and savage state, young and old appeared equally zealous for conversion, and to receive instruction.

Our party left for San Joaquim, the Brazilian boundary fort, at the end of June, 1838, where we intended to stay during the remainder of the rainy season. The new mission at Pirara already promised the best results, and at that period great changes might be observed in the conduct and manners of the Indians, when, under the plea of pressing natives for the Brazilian Imperial navy, one of those slaving expeditions arrived at San Joaquim, which have been practised by the Brazilians for ages, and have been the bane of the Indian races. The expedition was to be directed against Pirara, where, from the then populous state of that village, they thought they might seize a large number of unsuspecting natives. Many favourable circumstances combined, enabled me to have some influence in saving the new mission at Pirara from the evil effects and subsequent miseries of a *descimento*, as these slaving expeditions are called; it fell, however, upon some settlements at the Ursato mountains, on the eastern bank of the river Takutu, which they surprised at midnight, and having set fire to the houses, captured the greater part of their inhabitants, and ransacked the huts of every valuable article which they contained. I saw with the deepest sorrow, that the number of those who were led away into slavery consisted of forty individuals; namely, eighteen children under twelve years of age, thirteen women, and nine men, of whom only four were less than thirty years old, and consequently fit for the avowed purpose of

¹⁴ 'serving in the Imperial navy. The sensation which these cruel proceedings caused among the Indians at the new mission cannot be described. Seven hundred of them assembled at Pirara, where they thought that the presence of the missionary would protect them against the barbarous atrocities of unprincipled men.

Our expedition left San Joaquim in October, and after having explored more than two thousand miles, and visited many spots which never had been trod before by European feet, we returned to Pirara in May, 1839, and found it occupied by a detachment of Brazilian national guards, under Senhor Pedro Ayres. The church, in which formerly hymns to the praise of our Lord had been sung, and where the first seeds of Christianity had been sown among the benighted Indians, was now converted into barracks, and the theatre of obscene language and nightly revels. Urgent business had called the missionary to the colony, and during his absence it had been taken possession of by the Brazilians. On his return an official despatch was delivered to him from the commander of the upper and lower Amazon, who, it appears, assumed authority over Pirara, and desired him to withdraw and to disperse the mission. The Brazilian detachment had orders to see the mandate obeyed, or to enforce it in case of refusal. The missionary removed to the eastern bank of the Rupununi, and after his departure the inhabitants of Pirara dispersed and have since wandered about the wilderness. The traveller who may pass from the present village of Pirara to the place of embarkation on the rivulet Pirara, will observe a spot which evidently shows that it was once the site of human habitations: but posts, on which the vestiges of fire are observable, a few cashew and amatto trees, as well as some struggling shrubs of cotton, are all that remains of this once happy Macusi settlement. His guides will tell him, that on one dark night a lawless band of slave hunters arrived from the Rio Branco, surprised the poor inmates, and after having set their huts on fire, carried old and young away to die far from their native land in bondage and slavery. Too many desolated places are now to be seen in the savannahs, which were once the site of villages, and which met with a similar fate. May the moment soon arrive when the boundaries of the rich and productive colony of British Guiana shall be clearly defined, then only can peace and happiness be insured to the poor remnants of those who once roved in full supremacy over the soil which Europeans and their descendants have usurped. Taught by the past, let them settle on the British side of the frontier, and they will soon be aware, that

"Where Britain's power is felt,
Manhood will feel her blessings too."

Previous to the occupation of Pirara by a detachment of Brazilian militia, the Brazilians were not in actual possession of the regions further east than Fort San Joaquim do Rio Branco. This boundary fort, which is pleasantly situated in the midst of the savannahs, is built on the eastern shore of the river Takutu, within a few hundred yards of its confluence with the Rio Branco, the Parliama of the Macusi Indians, or Uiquera of

¹⁴ the Paravilhanas. A detachment of Spaniards from Nueva Guayana, on the Orinoco, arrived in 1775 by the Caroni and the Uraricapara at the Rio Braneo, and fortified themselves in the vicinity of the confluence of the river Yurumé. They were dispersed by the Portuguese, who, against the incursions of the Spaniards as well as against the Dutch, erected the boundary fort San Joaquin. It is constructed of red sand-stone found in the vicinity, and has fourteen embrasures mounted with eight nine-pounders in tolerable condition. A commandant, who is an officer in the provincial militia, and ten privates garrisoned it when we were there, and a small chapel and five houses constituted the village. Every two or three years a priest visits this fortress to administer to the spiritual wants of its inhabitants.

Our party spent the rest of the dreary time of a tropical winter in San Joaquin. We had received permission for that purpose from the commander of the district, AMBROSIO P. AYRES, at Manaus, or Barra de Rio Negro, who had sent his brother, PEDRO AYRES to welcome us at the Brazilian boundary, and to afford us every facility, which such a distant spot could yield towards our geographical pursuits. Two comfortable houses outside the fort were given up to us for our quarters, as long as we might think it convenient to use them.

This reception from a Government whom we knew to be at that time fully engaged in suppressing an insurrection, which had lasted for more than five years, and had therefore little leisure to pay attention to scientific objects, was more than I could have expected in my most sanguine hopes, and I felt truly grateful for the kindness and civility I experienced. The same hospitality had been shown on former occasions to Mr. CHARLES WATERTON, the author of the delightful "Wanderings," and to those two unfortunate travellers Lieut. GULLIFER, R.N., and Mr. SMITH, both of whom lost their lives in the attempt to visit the interior of Guiana. The circumstances connected with their death are of so melancholy a nature that they deeply excite our sympathy.

PURE-PIAPA,

▲ REMARKABLE BASALTIC COLUMN IN GUIANA.

LATITUDE 3 DEG. 59 MIN. N. LONGITUDE 59 DEG. 28 MIN. W.

The second day after we had left Pirara, on our journey to Esmeralda, and when that village was in a south-eastern direction, about thirty miles from us, we entered the chain of mountains, which we had hitherto followed only along their southern offsets. A large valley was before us, bounded on each side by precipitous and rugged mountains, crowned with war-like masses of trappean rocks, the strangeness of the forms of which did not fail to excite the attention of the Indians, who, as usual, were frightened at approaching what they believed to be the abodes of evil spirits. We traversed this valley, which was but thinly covered with grass, and bore evidences of having been lately inundated, and after a turn to the northward, we entered a basin-like expanse, surrounded by high mountains, and remarkable for

¹⁴ SCHOMBURGK'S, Interior of Guiana.

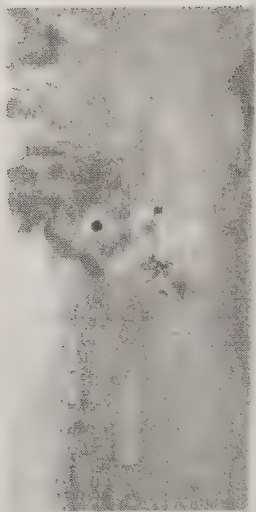


Fig. 1. The Breach Column

"the singular appearance of three masses of rocks. Mara-et-shila, the highest, appears to be of columnar basalt, terminating on the summit in one abrupt pillar about fifty feet in height: a portion which bulges out in the middle of this mass of rock has, by the ever-fruitful imagination of the Indian, been assimilated to the Maraca, a large rattle made of the fruit of the calabash-tree, filled with pebbles, feathers, and snake-teeth, and which is the indispensable instrument of the Piatsang, Piá-man, or Indian sorcerer, during his conjurations.

Near the entrance to the valley, and rising from sixty to eighty feet above the plain, is a columnar group of trap-rocks, the largest of which has been named by the Maen-is, Camye-piapa, or the Guava tree-stump. Half a mile further westward, and not quite so high, is another mass of rocks, which the traveller might mistake for the trunk of some large old tree, deprived of its leafy crown. It is a great object of wonder amongst the Indians far and near, who call it Puré-piápá, "the felled tree." So complete was the illusion, that I almost doubted my guides when they told me it was the work of nature, and was composed of stone. The rock rises straight to a height of at least fifty feet, its sides are partly covered by a red Lichen, and in some places it is more acted upon by weather than in others: the delusion being increased by this play of colours, the mind can scarcely divest itself of the belief that it is the gigantic trunk of a tree, the head of which, stricken by years, or shivered by lightning, lies mondering at its foot. On its summit, a Jabiru, a species of stork,* had built its nest, above which we saw the head of a young one. On our approach its mother hastened from a neighbouring savannah to its protection, and perched on one leg, on the summit of the rock, stood sentinel over the plain around.

The rock may be considered sacred by the Maenisi Indians, but it did not afford an asylum to the poor bird; for before I was aware of it, or could prevent it, we heard the report of a gun, saw the poor bird balance itself for a few moments, and, pierced by the ball, fall at the foot of the column. One of the Indians had taken my rifle, and he being too unerring a marksman, even the height which the bird had selected for its nest could not preserve its life.

We fixed our night-quarters near a streamlet, and as soon as the necessary arrangements for our camp had been made, I set off to visit this singular rock. The access to it is difficult, in consequence to the numerous boulders which lie on the side of the hill, with which we also found the summit to be strewed in confused masses. Sharp-pointed rocks, many thirty feet long, and scarcely six to eight inches thick, stood either erect or overlaid each other. They were of trap, and similar to those in the valley of the Mahu, and at St. Bernard's in Tortola. Interspersed with these broken rocks we found a few Palms, Cacti, the *Agave Americana*, *Bursera gummitera*, *Lecythidee*, and the wild *Jatropha manihot*. Amongst those in blossom, the snow-white flower, and purple fruits of the *Cactus repandus* were strikingly conspicuous.

* *Scolopax*, Interior of Guiana.

* *Mycteria Americana*. When full grown they stand from six to six and a half feet high.

¹⁴ 'It is not to be wondered at that three such remarkable objects as the Mara-etshiiba, Cannyé, and Puré-piapa have given rise to some tradition, the more so since the Indian who inhabits the mountains is like our mountaineers, more vivid and fanciful in his imagination, and possesses a larger stock of traditional history than he of the forest or of the plain; consequently it is related, that when Makunaima, the good spirit, wandered still upon earth, he passed these savannahs, and fatigued and thirsty, he observed a tree on the summit of a hill, which, in the hope of finding it covered with fruit, he cut with a stone axe. He was disappointed, and proceeded further eastward, and discovered the Cannyé or Guaya tree full of fruit; he cut it likewise, and after having refreshed himself, he proceeded on his journey. It appears that whatever Makunaima touched was converted into stone, and thus the trees were changed into this substance. Every rock among these mountains, which is of more than ordinary size, or fantastically shaped by nature, is compared to some bird, animal, or tree, and is supposed to have been petrified by the powerful wish of Makunaima.

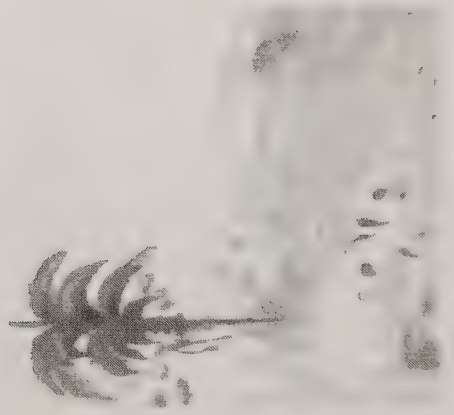
After having taken a sketch of this remarkable mass from the north, where it stood in the most advantageous point of view, we met with some delay in returning to our camp. The Indians had set the savannahs on fire, and we found it difficult to make our way through the columns of dense smoke, which for a time separated us from our companions.

The Puré-Piapa is no doubt of equal interest to the lover of the picturesque and to the geologist. An almost perfect column (for as such it would be taken if seen at the distance of a mile, and the architectural skill of the Indian permitted the idea that it were the work of art) crowns a hillock of inconsiderable height. Shall we adopt for its origin the theory of elevation, or has the ground which once surrounded it been washed away by tropical rains? Both theories will leave their doubts, while its picturesque appearance and the tropical vegetation which surrounds it, only tend to increase our admiration of the wonderful works of God.

RORAIMA,

LATITUDE OF EASTERN POINT 5 DEG. 9 MIN. 40 SEC. N. LONGITUDE 60 DEG. 45 MIN. W.

Vague accounts of a mountain, steep as a wall, and from the summit of which water flows in abundance, had been given to me during my first visit to Pirara in 1835 and 1836. I compared these with some details concerning a lake, which are to be found in the manuscript journal of HORTSMAN, who, says, that "at the distance of two days' journey, below the confluence of the Malm with the Rio Parima, a lake is found on the top of a mountain, which is stocked with the same fish as those in the Rio Parima, but the waters of the former were black, and those of the



1. *Riviera a Range of Sandstone Mon*

"latter white*." Neither direction nor distance however agreed with that which I had heard, and it was therefore planned, when we departed from Pirara in 1838 for the Orinoco, to make a detour in order to visit this remarkable mountain.

After we had passed Mount Mairari, instead of following the longitudinal valleys of the Pacaraima chain, we turned northward over the mountains, and on the 19th of October entered the country of the Arécuna Indians, a tribe of people, which it appears formerly inhabited the river Uaupes, and whom Montezúo and Rumbao accuse of cannibalism. Our party was however most hospitably received, and as we were the first white people who had come to visit them, we excited the greatest curiosity, and whenever we passed through one of their villages, we found entertainments prepared for us. A ridge of mountains, differing widely in appearance from those we had hitherto seen, extended east and west, which on our approach we found to consist of red and white sandstone, and after we had ascended them, we continued our march on table-land and entered the fluvial district of the Orinoco. At an abandoned settlement we got the first view of those remarkable mountains, to visit which was the object of present journey. Wrapped in dark clouds, and distant about forty miles to the north north-east, they rose like a gigantic wall, and contributed to the enchanting view which we enjoyed, while the vegetation that surrounded us displayed an interesting and peculiar aspect. In lieu of granite rocks, we observed only compact sandstone more or less crystalline, and with this change in the geological feature of the country, the form of the plants appeared to have undergone a similar alteration. Almost all were new to me; but one of the most interesting was an Orchidea, doubtless the largest yet described, and which, for the gracefulness of its stem, the splendid shape of its flowers, and its aromatic smell, is perhaps not equalled among this most singular and most fragrant tribe of plants. Long before we reached it the eastern breeze wafted the delightful odour towards us, and I looked inquisitively from side to side to discover the source of this fragrance; at last I espied flowers, white as a lily, which rose on graceful stems above the surrounding shrubs. I hesitated in pronouncing it to be an Orchidea, strange and eccentric as all this tribe may be in their forms; on coming nearer no uncertainty was left, and it proved to be one of the most beautiful of its class, and has since been named *SOBRALIA ELIZABETHA* in honour of Her Majesty the Queen of Prussia.

Such were the interesting features of the landscape in which Roraima,

14 SCHOMBURGK'S, Interior of Guiana.

* HUMBOLDT'S Pers. Narrative, vol. vi. p. 500. The mountain here alluded to is the Cumma or Sierra Grande, situated at the eastern or left bank of the Rio Branco, and about thirty-one miles below Fort San Joaquim. The popular tradition of the existence of this lake still existed when we sojourned in Fort San Joaquim, and the superstition, that he who should ascend its summit would die in the course of the year, led no doubt to its being neglected from being ascertained. I planned an excursion thither with Senhor Pedro de Azevedo, and we prevailed upon ANTONIO MOTA, the patriarch of the Vaupianos, an Indian, forty years of age, who said, that if we, who had still pretensions to some years of life, could ascend the mountain, he would, in a few years likely to be granted to him. We were however disappointed, for the mountain was inaccessible, nor is the second tradition much to be relied upon, as it is a reward of a year's life for reaching upon the summit of Cumma, for which I was in two years have been able since I enjoyed a splendid prospect from its highest point.

¹⁴ capped by clouds, formed the most striking object, and heightened our desire to visit it; but various circumstances intervened before we could execute our design, and the 25th of October approached before we left the Arécuna village, Uruapan. We continued our journey in a northern direction, upon an extensive table-land, and followed the southern foot of a range of sandstone hills, remarkable for their resemblance to fortifications on a gigantic scale. After we reached the foot of mount Anauparu, our path turned over hills so cleft and rugged in their structure, that we could only ascend them by treading in the exact steps that had been worn, or perhaps cut out by the Indians. Having ascended mount Canaupang, one of the highest we had yet crossed, and perhaps not less than four thousand feet above the level of the sea, our road led us on the descent towards a wood, which we shortly after entered. We issued from it again, entered a savannah, and turning round a small hillock, a pretty prospect opened before us. An Indian village occupied the foreground, and unlike the other Indian settlements we had seen, it was enclosed or barricaded; and Roraima, that remarkable range of flat-topped sandstone mountains, resembling basalt in their outline, rising like a wall in the north, formed the background. Dark opaque clouds hovered round their summits, which, chased by the morning breeze, produced such a sudden change of light and shade on these mural precipices, that they appeared perpetually under new shapes and colours. Our delight at this varying scene was of short duration, the mountains were suddenly enveloped in clouds, and hidden from our view. We reached the Indian village of Arawayan-borte, at eleven o'clock, which was inhabited by Arécuna Indians, and consisted of three square houses, with gable ends, and a round cabin. Unfavourable weather detained us here eight days; the mountains were almost constantly clouded, and no day passed without thunder and lightning.

We started at last, on the 2d of November, for the Roraima range, crossed several intermediate ridges and rivulets, and ascended Kaimari, a mountain about four thousand feet above the level of the sea, in doing which a tract of the finest white clay attracted our attention. On reaching the summit we could not but admire the regularity with which a number of blocks of different sizes were placed. If human hands had set them with line and compass they could not have been laid more regularly.* We halted at the foot of Roraima, at a settlement of two houses, built on the left bank of the river Kukenam, the inhabitants of which fled to the woods when they saw us approaching; but we soon reassured them, and they returned, when they told us that they had taken us for Brazilians come to capture and lead them into slavery. After we had rested and refreshed ourselves, we

¹⁴ Schomburgk's, Interior of Guiana.

* They consisted of decomposed felspar, and their direction was S. 81 deg. W. We found similar blocks at the foot of Roraima, and the white clay which we noticed was no doubt the remainder of decomposing felspar. We likewise saw, at Mount Kaimari, a few blocks of compact felspar, of a blue colour; the surface, however, from exposure to the air, was white and pulverulent. At the river Kukenam, where it passes the foot of Roraima, similar compact stratified felspar occurred a bed of yellow ochre resting upon it. Red Jasper (Hornstone) is frequently met with in the vicinity of Roraima, chiefly at the river Cako, but the predominant rock is sandstone more or less compact, which surmounts the other formations and forms the mural precipices. Truly as I tried to find limestone and gypsum in the vicinity of this mountain group, I could not discover either.

"commenced the steep ascent, and stood, at six o'clock in the evening, within a mile of the perpendicular walls of Roraima. We encamped for the night in a hollow, about three thousand seven hundred feet above the Arécuna village of Arawayan-botte, where we had the greatest difficulty in procuring fire, the constant moisture which prevails on these heights having rendered the brushwood too damp to burn. At midnight the thermometer stood at 59 deg. Fahr., and the cold rendered us quite uncomfortable, for our constitutions had become sensible to such a decrease of heat, accustomed as we were to the uniform temperature of the lowlands; nor did the fires, which we could not kindle into bright flames, afford us any warmth. Before sunrise, and half an hour after, Roraima was beautifully clear, which enabled us to see it in all its grandeur. These stupendous walls rise to a height of one thousand five hundred feet, their summit is therefore five thousand two hundred feet above Arawayan-botte. They are as perpendicular as if erected with a plumbline; nevertheless in some parts they are overhung with low shrubs, which, seen from a distance, give a dark hue to the reddish rock, and an appearance of being altered by the action of the atmosphere. BYRON DE HUMBOLDT observes, that a rock of one thousand six hundred feet of perpendicular height has in vain been sought for in the Swiss Alps, nor do I think that Guiana offers another example of that description. A much more remarkable feature of this locality, however, lies in the cascades, which fall from this enormous height, and strange as it may appear, afterwards flow in different directions, into three of the mightiest rivers of the northern half of South America, namely, the Amazon, the Orinoco, and the Essequibo. The origin of this abundance of water can only be explained by the circumstance, that the precipitation of atmospheric vapours is much promoted by those cold and high mural precipices: local peculiarities, and among these the thick forests, which towards the north extend from the foot of these mountains to the coast of the Atlantic, while large savannahs spread to the south, may in many respects contribute to the increase of aqueous vapours. The summit of the mural precipices is somewhat rounded, and overgrown with shrubs; but that part which rises in a rounded form over the walls, must be of inconsiderable elevation, perhaps not more than fifty feet; nevertheless at this height from the summit, where the mountains assume the wall-like appearance, the supply of water is so great that it falls in streams, and forms those wonderful cascades for which Roraima is famed among the Indians, who in their dances sing of the wonders of "Roraima, the red rock, wrapped in clouds, the ever fertile source of streams;" and in consequence of the darkness which frequently prevails, when thick clouds hover about its summit, it is likewise called the night mountain—"Of Roraima, the red rock, I sing, where with daybreak night still prevails." This was one of the burdens which we heard many times repeated, during the dance of the Arécuna Indians, in the vicinity of this mountain group. Roraima and the neighbouring mountains of the same structure represent, on a large scale, that which the spring of the Brocken in the Harz mountains offers

" in miniature; namely, water breaking out from the side of the mountain only a short distance below its summit.

We left our camp soon after sunrise, and attempted to reach one of the cataracts which appeared more voluminous in water than the others. We had to cross a marshy savannah, abounding in most curious and interesting plants. Among these was an *Utricularia*, the prettiest of its tribe, and which I have since had the pleasure of dedicating to the most distinguished among American travellers, Baron de HUMBOLDT. The stem is of a dark purple colour, rises to a height of three or four feet, and bears several flowers about two and a half inches in diameter, also of a beautiful purple. Another plant of great interest was a new genus of Pitcher plant, the *Heliamphora nutans*, with radical leaves, and a hollow, urn-shaped petiole open at the top, the lamina forming a small concave lid, which differs however from that of the *Nepenthes* in not closing over the pitcher, or urn-shaped petiole. The scape bears a loose raceme of from two to six nodding flowers, sometimes white, sometimes tinged with rose colour. Of no less interest is a *Cypripedium* and a *Cleistanthus*, the latter with deep scarlet flowers and stem, and purple leaves, growing by the side of the *Utricularia* and Pitcher plant. We found another species of *Sobralia*, differing from the *S. Elizabetha* in its having sheathing, hairy leaves, and the labellum and petals being of a bright pink.

The execution of our design to reach the large cascade, which the Indians called Kamaiba, was no easy task; the surprising strength of vegetation, and the entanglement of trees and creepers, only permitted us to advance slowly, and numerous craggy precipices, which we were forced to descend by means of lianas and ladders of roots, even presented dangers. A humid vapour appears to be here constantly held in suspension, and the rays of the sun are scarcely admitted through the thick canopy of foliage. The trunks of the trees are thickly clothed with Mosses and Lichens. The *Arum*s and *Pothos*, almost gigantic in size, *Uranias*, *Heliconias*, arborescent Ferns, in appearance more resembling the stately Palm than the Fern of our northern countries, and numerous *Alpinias* contested for the possession of the soil which had gathered between large blocks of a black colour, their surface also affording a peculiar vegetation of *Orchideae*, *Gesnerias*, *Peperomias*, and numerous succulent plants, all attesting the humidity of the spot. Large trees, rooted in the clefts, and overhanging the glens, added to the sombre character of the scene. An oppressive solitude prevailed; there was no sign of animal life; only the noise of falling waters was heard, which served as a guide to direct our steps thither. We had continued our dangerous path for several hours, sometimes ascending, sometimes descending almost perpendicular cliffs by means of the roots of herbageous plants, or those natural ropes formed by the *Bauhinia* tribe, when the thunder-clouds which had been threatening, passed the mountains and enveloped us almost in darkness; the rain fell in torrents, and thunder and wind appeared to vie with the cataract in producing the greatest uproar. The forest opened, and, as if it had been called forth by magic, a perpendicular wall stood before us, from which the Kamaiba,

"swelled by the torrents of rain, precipitated itself with a thundering noise into a spacious basin below. The whole environs seemed as if enveloped in foam, and the gusts of wind which accompanied the storm raised the froth before it in flakes. The summit of the wall was perfectly hidden from us; even the cliff opposite the one on which we stood was only seen occasionally as through a veil, illuminated by vivid flashes of lightning. Numerous blocks, apparently torn from these gigantic walls, which were lying in great confusion around, conveyed the possibility that a similar accident might now occur, an idea which was strengthened by the uproar of the elements; and the danger of being near to these cliffs was so fully impressed on me, that instead of enjoying this romantic scene, I felt oppressed, and a wish to escape from it. It appeared to have communicated a similar feeling to my companions, for not a word was spoken; the Indians squatted on the ground and looked dispirited; indeed every one appeared to feel relieved when I gave orders for our return. This, however, was not done before we descended to the basin, and had tried the temperature of the water, which we found to be 56 deg. Fahr., that of the air being then 61 deg. Fahr. The perpendicular wall of Roraima, whence Kamaïna falls from the summit, had been ascertained from Arawayam to be fifteen hundred feet high, it therefore surpasses in height the celebrated Staubbach in the Swiss Alps, which is nine hundred French feet, and presented, at the time of our visit, a real cascade, not a mere precipitation of mist. In height it surpassed the Cascade de Gavarnie in the Pyrenees by nearly two hundred feet, which has been hitherto considered the highest, being one thousand two hundred and sixty-six French feet. I estimated the breadth of the fall at about seventy yards. Of the extent of the arc which this mass of water formed in its descent I could not judge; the basin which received it might have been compared to a vast cauldron, the water foaming and bubbling within it with uproarious noise.

Turbulently pushing itself a way through the numerous blocks which fill the bed of the mountain stream, it continues for a few hundred yards, and, approaching another cliff, it precipitates a second time, down a height of about one hundred and twenty feet.*

We returned by the path which we had partly cut through the thick wood on our way, and the continued rain and low temperature chilled us completely. When we issued from the wood and again approached the mountain savannah, we found ourselves perfectly enveloped in clouds, driven rapidly across by gusts of wind, and the thermometer fell to 37 deg. Fahr. Once or twice it partially cleared, and we observed a sunny landscape within a few miles from the foot of this mountain; the thunder-storm was therefore perfectly local.

Roraima is the most eastern, and the highest of this remarkable group of mountains, the greatest extent of which between Roraima and Irutibuh is about twenty-five miles in a north-west and south-east direction.

1180000000's, Interior of Guiana.

* The geological character of this cliff is sand-stone with grains of quartz and particles of decomposed felspar, and is so compact and hard that I found it difficult to break off any specimens, nevertheless the water had likewise here hollowed out a large basin for itself. The perpendicular high walls are of similar

" North-west of it is Ikukenam and Ayang-catsibang, and to the north Marina, which form almost a quadrilateral figure. This quadrangle from south-east to north-west occupies ten geographical miles; the eastern end of Roraima, which has entirely the appearance of a gigantic portal, is, according to my calculations from astronomical observations in Arawayam-botte, in 5 deg. 9 min. 40 sec. N. latitude, and five thousand one hundred feet above that village, and the north-western point of Ayang-catsibang in 5 deg. 18 min. N. latitude. At the distance of two miles north-west from Ayang-catsibang rises another rocky wall, Irwarkarima, to a height of three thousand six hundred feet, remarkable for an urn-shaped rock at its eastern end, which, standing as it were on a pedestal of three thousand one hundred and thirty-five feet above the Arèuma village, is four hundred and sixty-six feet high, and at its widest part three hundred and eighty-one feet.* Next follows Wáyaca-piapa, or the felled tree, another of those monuments of stone, which, formed by nature, has been compared, like Paré-piapa, to the trunk of a tree deprived of its crown, and the Indians have attached a similar tradition to it. Wáyaca is less in height than the rest of the group, and resembles an obelisk with a truncated head. The three mountains, Yumaruime, Caranungtebuh, and Imtibuh conclude the group, which, if seen from the Arèuma village, appear like one.

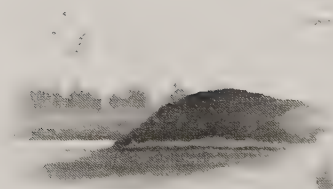
I can but imperfectly describe the magnificent appearance of these mountains, with their thundering and foaming cataracts, and the peculiar aspect which these gigantic walls offer if seen from Arawayam-botte. They convey the idea of vast buildings, and might be called nature's forum, or associating them with those splendid remains of man's gigantic conception and execution, we may imagine what the forum would have been, if its columns and walls could have been raised to a height of one thousand five hundred feet, and if it had covered an extent of ten miles. Although this village is between fifteen and twenty miles from the mountains, which form the quadrangle, I recollect one afternoon, when a severe thunder-storm had just abated, that with the naked eye we counted fifteen cataracts, which precipitated themselves from their walls. From the eastern end of Roraima and a short distance from that gigantic portal, flows the Coting or Cotinga, mingling its waters with the Takutu, Branco, and Negro, and ultimately falling into the largest river in the world, the Amazon. A little to the north of it descends the Chya, a tributary to the Cako, which, joining the Mazuruni or Mazuring, flows into the Essequibo. Several streams from the south-western side of Roraima flow into the Kukenam; among them is Kumaiba; which forms the cascade before described. The Kukenam has its source in the neighbouring mountain, Ikukenam, and forms, at its confluence with the Yuruaui, the River Caroni, a tributary of the Orinoco. The Yuruaui itself, which the Indians consider as the head of the Caroni, flows in numerous streams from the north-eastern side of Ikukenam, and is joined by others from its western side, and from the mountains of

14 Schomburgk's, Interior of Guiana.

* These measurements are all the results of trigonometrical operations in Arawayam-botte: it must be however recollected that they were performed only by means of a sextant, and are consequently merely approximations.



15 *Purumana, the great Cataract of the River Parima.*





" Ayang-catsibang, Zarangtibuh, and Iwarkarina. The river Aripam also flows in numerous streams from the rocky wall of Marima. The Cako, one of the chief branches of the upper Mazuruni, rises on the eastern side of Irutibuh, while the Cana, which flows from the western side, joins the Apawanga, a tributary of the Caroni. The abundance of water which proceeds from these mountains may be judged of from the circumstance, that the Kukenam, within three miles of its source, already forms a stream from forty to fifty yards in breadth.

This group of mountains is the culminating point of the Sierra Pacaraima, and here unite the natural boundaries of British Guiana, Venezuela, and Brazil. This mountain range is therefore not only remarkable for its picturesque scenery, and its importance in geography, but it likewise possesses peculiar interest from political considerations.

PURUMAMA.

THE GREAT FALL OF THE RIVER PARIMA.

LATITUDE 3 DEG 20 MIN. N. LONGITUDE 62 DEG. 5 MIN. W.

After our visit to Roraima we travelled about one hundred miles, in a south-south-west direction, over savannahs and mountains, and embarked in canoes on the river Parima, which some Indian tribes call Urariquerá, and the Brazilians, from the colour of its water, Rio Branco, or white river, in contra-distinction to the Rio Negro, which has black waters.

From the information which I had collected from some Maioungkong Indians, one of whom was particularly acquainted with the regions of the Orinoco, I thought it advisable to follow the Parima, in order to reach Esmeralda on the upper Orinoco. We embarked on the 6th of December, and found the river much obstructed by falls and rapids, and our progress was consequently very slow. In the morning of the 10th of December we reached the mouth of the Uraricapará* which joins the Parima from the north-west.

Towards the end of the last century, namely in 1775, the Spaniards, who claimed the sovereignty over those regions, erected a small fort on the right bank of the Uraricapará, called Santa Rosa, which however was not many years after abandoned, and its site was already overgrown with bushes when the Portuguese surveyors visited it in the commencement of this century. A chain of hillocks, which crosses the Uraricapará, likewise traverses the Urariquerá or Parima, and not far from the junction of both rivers forms the formidable cataracts.

The Purumama Invern is without doubt one of the largest falls in Guiana, and vies in size and magnificence with the cataract of WILLIAM IV, on the Essequibo, and the falls of the Corentyn. This powerful obstacle to navigation seems to arise from the river having forced its way through the hilly range to which I have already alluded. Diminishing to

¹⁴ Seeuwerker's, Interior of Guiana.

* Uraricapará and Urariquerá are compound terms of Urari, the plant of which the Indians make their arrow poison, and which I discovered to be a species of *Stychnos*. Capará signifies "river, stream;" but the signification of quera, or as it is pronounced by the Paravilbanas Coira, I am not able to give.

"about fifty yards, it divides into two streams, and precipitates itself from a height of forty, or forty-five feet to the basin below. The grand and awful appearance of this large body of water is sublime beyond description, and in consequence of stony dykes, has for miles previous to its reaching the large fall, formed an uninterrupted succession of rapids and whirlpools, and ultimately dashes down a precipice of forty-five feet between two immense pillars of black shining rocks, which rise at the brink of the precipice from the foaming waters. The outflow from the basin here owes its existence to the narrowing of the main channel of the river on either side, in consequence of two or more abutments of rocks, and was not more than thirty feet wide when we saw it. Through this contracted channel, the whole mass of the waters of the Parima, just after having rushed over a precipice, is forced to make its way. On meeting with this new obstacle an indraught is caused and rushes back in an eddy, and forms in the middle of the basin a vortex or whirlpool, which perhaps more powerfully realizes the picture of the Charybdis as painted by the ancients, than we find that whirlpool does in reality. In order to witness its power we sent some Indians above the fall, and ordered them to cut down one of the largest trees which lined the bank. How great was our admiration when, after having been directed into the midchannel, it approached the chasin, and with its numerous branches was hurled down the precipice! Scarcely had it approached the whirling gulf, when it was sucked under, and when it reappeared it was already in the middle of the outflowing stream, a naked trunk, its countless branches broken, and rushing down the impetuous channel.

The grandeur of the tropical scenery, the numerous Palms and *Uranias* with their gigantic leaves, which skirt the Cataract, and add sublimity to the mountains around, enhance the picturesque view of the Parumana Iméru.

We distinctly heard the roar of the great cataract before we reached the junction of the Uraricapara with the Parima, and at least at a distance of a mile and a half from the fall. A little beyond, a second fall occurs of about twenty-five feet, making altogether a descent of from seventy to seventy-five feet, and to overcome this formidable impediment to our navigation of the river, we had no alternative but to carry our corials over the range of hills, which rise about three hundred and fifty feet above the river. Though the ascent was for about a third of the way at an angle of sixty degrees, and the Indians had to support themselves by steps and ropes of lianas, which had been made by our predecessors, we nevertheless completed the portage by four o'clock in the afternoon, and embarking above the cataracts, once more proceeded about half a mile further to a convenient resting place.

Rapids and cataracts opposed numerous difficulties to our progress the next morning, which we safely surmounted, and arrived at one o'clock at a Zapara settlement, where we found the people located in a very wild spot, almost inaccessible from the falls and rapids by which it is encircled. The



16 Junction of the Kodanara with the Parana.

"Men and women of this tribe were so hideously ugly that we called them the Ugly Faces. They seemed to suffer, most of them, from inflammation in the eyes; many squinted horribly, and others were evidently dropsical. Their voices were squeaking and very disagreeable; the chief was, however, a good looking personage, and one young girl formed a striking contrast, she being the prettiest Indian I had as yet seen. Altogether there might be about forty of them crowded into three huts; these were built in a round form, neatly thatched with palm leaves, not pointed at the top as the Macusi houses are, though with an opening for smoke. The interior was clean, the only thing commendable among them.

The Zaparas, it appears, have arisen from the intermarriage of Maensis and Arëenais. They principally inhabit the mountains Tupac-eng and Waikamang, though there are likewise a few of their settlements along the banks of the Parima, of which this was one. Their whole number probably amounts to not more than three hundred. They differ little in appearance from the Maensis; if any thing, they are more slender, and not so robust in figure. I had no opportunity of collecting any of their words, but their language is merely the variety of that of the parent tribes, the Arëenna and Maensi.

JUNCTION OF THE KUNDANAMA WITH THE PARAMU.

LATITUDE 3 DEG. 30 MIN. S. LONGITUDE 67 DEG. 34 MIN. W.

We continued the ascent of the river Parima from the Zapara settlement, in latitude 3 deg. 16 min. N., to the confluence of the Arekatsa, which falls into that river in latitude 3 deg. 44 min. N., and following a north-west direction, ascended the mountains which divide the Merewari and its tributaries from the Arekatsa and Parima, and entered the country of the Guiana and Maionkong Indians, many of whose tribes live in a perfect state of nudity, but to whom, in spite of their savage state, hospitality was no stranger. They had no knowledge of Esmeralda, or mount Duida, by those names, though on further explanation I concluded that Esmeralda must be their Mirara, and the Duida, mount Yéomauri. Under these circumstances I determined, as soon as my invalids (several of the Indians who had accompanied me) were convalescent after their fever, to cross the peninsula formed by the Merewari, and to proceed westward in search of the sources of the Orinoco.

We had already entered the fluvial system of the Orinoco, and found all the streams which we crossed, flowing south-westward into the Ocean, when our Indian guides pointed out one of the mountains forming part of a chain, the blue outlines of which we saw to the southward, where they said the Orinoco and Parima derived their sources; we therefore had reason to hope that we should reach them in a few days, but the evening of the 1st of February put an end to our anxious expectations. We arrived at a Maionkong settlement, the inhabitants of which we found in great consternation, and about to fly from the place in consequence of the massacre of twenty of their tribe by the Kirishanas, who inhabit the mountains

" between the Orinoco and Ocauro, and who had treacherously fallen upon them, when by invitation they had been on their way to visit them for the purposes of traffic. The same savages had immediately afterwards surprised a Maiongkong settlement, only a day's journey from where we then were, and with the exception of a child, who had found means to hide herself, killed every person. These outrages had caused a general panic, and my party of Maiongkongs became infected with the same fears to such an extent, that not only did they peremptorily refuse to go forward, but made hasty preparations for taking to their heels and leaving us to our fate. We were thus obliged, most reluctantly, to turn back at the very threshold of the sources of the Orinoco. However, their true position is no longer a geographical problem, a single glance on the map where my route is delineated will show, that all uncertainty as to their situation is reduced to within the narrow limits of less than thirty miles.

I now determined to attempt reaching Esmeralda by a long circuit to the northward, by which the Indians considered themselves safer from their enemies. It was a most wearisome and monotonous route, over steep mountains and through forests so dense and high that nothing was visible beyond our path. The *Uranias*, *Heliconias*, and *Palm* trees vanished, and on the summit of these elevations we found two species of *Lichens* (*Cladonia rangiferina* and *reticulata*), of a pure white colour, which thickly covered the ground, and gave the appearance of a heavy fall of snow. We crossed the river Paramu or Padamo, on the 10th of February, and remained for some days at a Maiongkong settlement near mount Marawaco. During our stay I found an opportunity of ascertaining to what genus of plants those remarkable reeds belong, of which the Indians make their blow-pipes, and which are from fifteen to seventeen feet long, entirely free from any thing like a knot in that length, quite straight and smooth, and perfectly cylindrical. I found that they grew at the foot of Marawaco, and from specimens which were brought to me in flower, they proved to be a new species of *Arundinaria*.

We started from the Maiongkong settlement on the 15th of February, and embarked on the Paramu, which we followed in a southern course. Somewhat below the river Puruniama a series of falls commenced where we met with a serious disaster. One of the small canoes or corials, in passing a fall, filled with water and sunk, and though the corial was recovered, her load was almost entirely lost. Among other things was a small quantity of salt, which, after having been deprived of that condiment for several weeks, we had found an opportunity of buying at an enormous price from some Indians. It was a great punishment to us Europeans who were accustomed to salt, and for my part I freely confess, that of all privations which we naturally suffered after being for such a long period away from all traces of civilization, I felt none so bitterly as the want of salt. With the corial likewise sunk all our plates and kitchen utensils, which, although not of the most valuable metal, had rendered us the same service as the most costly would have done, and what was worse, could not be replaced. A

¹⁴ a similar accident shortly afterwards befel another canoe, and the river Paramu appeared to be a succession of rapids and falls, some so large and dangerous, that we had to unload the corials five times in the course of the 15th of February, and to carry the luggage over land. The following day, about noon, we reached the cataract Mariwaru, the largest we had yet passed in the Paramu; the river precipitated itself upwards of thirty feet over a ledge of rocks, and we had therefore to unload and to carry our corials and baggage over land to the foot of this formidable obstacle. Thence we followed the river in a south-east direction, when towards sunset we saw, at some distance before us, what I at first mistook for clouds of white smoke from the fires which I supposed to have been kindled by some of our Indians who had gone on before; but I was soon deceived, it was a sheet of foam caused by a cataract which the river Kundanama forms at its junction with the Paramu. This river, coming from the north-east, is, near its junction, about thirty-five feet higher than the Paramu; it falls gradually fifteen feet, when at its very mouth, the river being divided by a small island into two streams, it rushes down two grand cataracts, the southernmost of which is twenty feet high. The dense white foam contrasts strongly with the dark colour of the Paramu, and is almost lost by the contest of waters, rise high into the air, and hang like a veil over the verdant clusters of Palms and thick umbrageous

Need I observe that we stopped to enjoy this sublime scene. Our pencils were soon engaged in transferring to paper the striking features of this remarkable spot? I know no other instance where a river joins its recipient in so turbulent a manner. I estimated the breadth of the two falls at three hundred yards; at their foot they formed a large basin, studded with huge black blocks, and on its southern shore thick masses of sand were deposited, brought down by the Kundanama from the sandstone mountains. We had crossed this stream on the 1st of February, in latitude 3 deg. 57 min. N., where it was of inconsiderable breadth, and whence its course had been south-west by south to its junction with the Paramu, in latitude 3 deg. 30 min. N.

The effect caused by the junction of the Kundanama and its whitish waters, with the Paramu, the waters of which are called black, is peculiar. There is no gradual transition, the turbulence of the Kundanama frequently pushes bodies of whitish water among the black stream of the Paramu, giving a spotted appearance to the latter. We found the Indians, who had preceded us, occupied in shooting fish; and the large basin below the cataract appeared to teem with the delicious Pacu and other fishes. The skill of the Indian in securing these animals by this method cannot be sufficiently admired, and if the false reflection, and the resistance which the water offers to the arrow be considered, it is easy to conceive how precarious is this method of procuring them; but the Indian has, by practice from his earliest age, conquered what we consider obstacles, and those tribes who have no intercourse with the coast, and consequently are unable to procure hooks, depend solely upon their bows and arrows for their success in fishing.

" We passed the last cataract of the Paramu on the 20th of February, and I was truly thankful to the Almighty that it had pleased him to allow us to reach their termination without accident. The Paramu in the number and height of its falls surpasses any river I have ever before seen, and many an anxious moment had I known during our descent.

Below the last cataract we were welcomed by a pair of fresh water dolphins, which followed us, sporting and gamboling around the canoe. On starting the succeeding morning from our night camp, they again made their appearance; at least we fancied they were the same, as we saw no more than that one pair; and under their escort, we, at nine o'clock in the morning of the 21st of February, entered the Orinoco, and expected to reach Esmeralda on the succeeding day.

ESMERALDA ON THE ORINOCO.

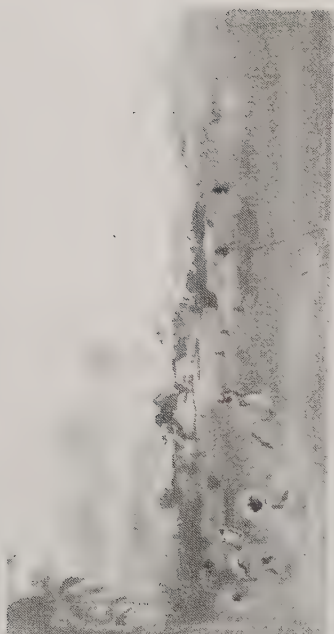
LATITUDE 3 DEG. 11 MIN. N. LONGITUDE 66 DEG. 3 MIN. W.

Although Esmeralda has not excited the same interest as that which has been attached to El Dorado, it has yet attained some celebrity, and in consequence of a mineralogical error, it attracted general attention towards the middle of the last century. During the general search in the newly discovered continent for mountains impregnated with gold and boundless riches, the rock-crystals which were found at the mountains of Duida and Maravaca, some of them of great transparency, others coloured by chlorine blended with actinolite, were taken for diamonds and emeralds;* and to the miserable hamlet of twelve or fifteen huts, the pompous title "*Nueva Villa de Esmeraldas*" was given. In later times it has been brought again into remembrance by the journey of Baron DE HUMBOLDT, who visited Esmeralda, in May, 1800, and made it his extreme point in his remarkable ascent of the Orinoco. The hostility of the Indians, who inhabit the upper part of the Orinoco, prevented him from advancing further.

One of the ulterior objects of these expeditions, which were undertaken in the interior of Guiana under the direction of the Royal Geographical Society, was to connect the positions astronomically ascertained in British Guiana, with Esmeralda, the most easterly point determined by Baron DE HUMBOLDT; to effect which, we had to traverse seven hundred miles of a country never yet trodden by any European, as far as we know, and to suffer privations and fatigues of every description. As already related, we entered the Orinoco by its tributary the Paramu or Padamo, on the 21st of February, 1839, and encamped that night opposite to the mouth of the Wapo. Our camp was broken up next morning at six o'clock, in full expectation of reaching Esmeralda that day. Light fleecy clouds enveloped Mount Duida, but they vanished after the sun rose above the horizon, and for the first time we had a full view of these stupendous rocky masses, partly illuminated by the rays of the morning sun. Our progress was attended by difficulties: we got aground several times on sandbanks, and had to cross from shore to shore to avoid shallows, and to follow the winding

14 SCHOMBURGK'S, *Interior of Guiana*.

* DE HUMBOLDT'S *Pers. Narr.*, vol. v, p. 503.



17 *Esmeraldo on the Orinoco.*

the course of the current. At length we came in view of a fine savannah, interspersed with thickets of trees, and tufts of *Mauritia* Palms. I knew it, from Humboldt's description, to be Esmeralda, and some canoes, which were tied to the river's bank, left us no further doubt. I cannot describe with what feelings I hastened ashore; my object was realized, and my observations, commenced on the coast of Guiana, were now connected with those of Humboldt at Esmeralda. It is but due to that great traveller to acknowledge, that at times, when my own physical powers were almost failing me, and when, surrounded by dangers and difficulties of no ordinary nature, his approbation of my previous exertions cheered me on, and encouraged me to that perseverance which was now crowned with success. The emaciated forms of my companions, and my faithful Indian guides, told more than volumes what difficulties we had encountered.

The village was a few hundred yards from the shore; half way to it we were met by the Alcaldé, who welcomed us in broken Spanish. His attire certainly did not bespeak his dignity, being nothing but a shirt made of the bark of a tree. He led us to his hut where his wife, children, and grandchildren were assembled, and while his Señora put some smoked fish and cassada before us, he made incessant inquiries respecting European affairs; he spoke of France and Paris, England and London, Prussia and Berlin; he inquired what states were at war, and what FERDINAND VII. was doing in Catalonia. The change of affairs in Spain was new to him, and he could not conceive how a Queen could govern there, equally wonderful to him was DOÑA MARIA's accession to the Portuguese throne. He mentioned NAPOLÉON; and indeed showed that he had a very fair acquaintance with European matters, which we accounted for, when he told me that he had served, during the late revolution in Colombia, as a sailor on board a privateer, under a Caudonian commander, and had been much in the West Indies. Old ANTONIO YARUMANI was an Indian of the Ipavaquena nation, which inhabits the banks of the Durocua, or Siapa, a river which falls into the Cassiquiare. After the independence of the Colombian republic had been declared, he had settled at Esmeralda, and was now surrounded by a numerous family, over which he presided.

Thirty-nine years had now elapsed since ALEXANDER VON HUMBOLDT visited Esmeralda, and found, in the most remote Christian settlement on the upper Orinoco, a population of eighty persons. The cross before the village still showed us that its inhabitants professed the Christian religion; but their number had dwindled to a single family—a patriarch, and his children and grandchildren. Of six houses which we found standing, only three were inhabited; their plastered walls, and massive and well-finished doors, showed that they were not built by Indians. Before one of them, which we supposed to have been the church or convent, we observed a small bell hung up in the gallery, bearing the inscription—"SAN FRANCISCO DEASIS CAP. 1769."

Whatever change time might have produced in the works of man, nature had remained the same. Duida still raises its lofty summit to the clouds, and flat savannahs "decorated with clumps of the *Mauritia* Palm,"

stretch from the banks of the Orinoco to the foot of the mountains beyond, giving to the landscape that grand and animated appearance which so much delighted Dr HUMBOLDT. A ridge of heaped-up blocks of granite, named *Caquira*, of the most picturesque forms, and in some places looking like vast edifices in ruins, occupies the foreground, and at its foot Esmeralda is situated. Some pious hand has planted a cross on the largest of these granitic blocks, the airy form of which stands boldly in relief, with the blue sky as a background, and heightens the picturesque appearance of the surrounding scenery. It also reminds us, that although nature and man appear in a savage state, there are still some in this wilderness who adore the Deity, and acknowledge a crucified Saviour.

The village is about seven miles distant from the foot of Duida, which mountain rises to a height of seven thousand one hundred and forty-seven feet above Esmeralda, or probably eight thousand two hundred and seventy-eight feet above the sea.* The Indians of the rivers Paramu, Cunucuma, or the Maionkongos, or Maquiritares, in general call the Duida, *Yeonamari*; and Esmeralda, *Mirara*. Towards the west north-west the mountains rise gradually to the height of about two thousand feet, clothed at first with dense forests, succeeded by rocky cliffs, only here and there thinly covered with vegetation. The range extends in sinuous outlines towards the loftiest peak, which bears north 30 deg. west from the village. Its base is covered with wood, from which a misshapen rocky mass rises boldly to a height of four thousand six hundred and sixty feet, and so precipitous, that it is impossible to climb its summit. A similar rocky mass of considerable height stands west of Duida; I could not however ascertain its actual elevation above the savannah, in consequence of dark clouds, which, during the period of our stay, hovered constantly round its summit, while to the west the ridge was perfectly clear. The base of the mountain chain is of granite, but where the dense wood ceases, and the rocky mass rises for four or five thousand feet almost perpendicularly, it is of quartzose sandstone, more or less compact in its nature. Numerous veins of quartz traverse this sandstone in various directions, and are analogous to those of the crystal mountains near *Borima*. Spots of dazzling whiteness are observable along the precipitous declivities of Duida, when the atmosphere is clear, and the sun reflect his rays on its walls, which consist no doubt of quartz; and the numerous fragments which we found on the savannah below, and in the beds of the streams which flow from it, prove the abundance of this mineral throughout the range.

A charming prospect presents itself from the cross of which I have already spoken. To the north, the high mountains, with their steep wall-like forms throwing out buttresses and escarpments which look like the works surrounding a vast fortification, soften into blueish tints as they recede in the distance. The course of the Orinoco upwards can be traced for a considerable distance; and a few isolated, rounded hills, of inconsiderable height, rise on either side of its banks: elsewhere, dense forests cover the

* See Humboldt's *Tour of Guiana*.

* See also Humboldt's *Personal Narrative*, vol. i. p. 200, and *Journal of the Royal Geographical Society of London*, vol. x. p. 246.



18 Fort San Gabriel.

the plain. Below is Esmeralda, looking like a deserted village; the noon-tide heat and prodigious swarms of sand-flies confining the few inhabitants to their houses; the savannah extends from the village to the river; a few stunted trees, and some *Mauritia* Palms rise from the thick grass, on which numerous ant-hills, of a pyramidal shape, from three to four feet high, and black like the soil of which they are built, form a singular and remarkable object.

Baron DE Humboldt observed, that the inhabitants of Esmeralda "lived in great poverty, and their miseries were augmented by large swarms of mosquitoes," an observation equally applicable at the present day. The inhabitants are miserably poor, and as to the numbers of sand-flies, or mosquitoes as they are more properly called by the Spaniards, from the first dawn to nightfall, they surpassed any thing I had ever seen. Indeed, Esmeralda, on account of the immense number of insects which obscure the air at all seasons of the year, was considered by the monks, when the missions still existed along the Orinoco, as a place of banishment and malediction, and to be sent to Esmeralda was said "to be condemned to the mosquitoes, to be devoured by those buzzing flies with which God has peopled the earth to chastise man."¹⁴ In consequence of the bites which they had inflicted upon me during our stay in Esmeralda, more than four months elapsed before I was perfectly cured; and although in romantic scenery and situation Esmeralda may not be easily surpassed, I almost feel inclined, with the good-fathers, to consider it as a place of proscription and chastisement.

FORT SAN GABRIEL.

LATITUDE 0 DEG. 7 MIN. 30 SEC. N. LONGITUDE 67 DEG. 17 MIN. W.

After a stay of three days in Esmeralda, we left it on the afternoon of the 25th of February, and continuing the descent of the Orinoco to the west north-west for thirteen miles, we arrived at the remarkable bifurcation of this river, so well and so fully described by Baron DE Humboldt, that little is left for any subsequent traveller to add. From this spot the principal branch of the Orinoco pursues its course west by north, winding round the foot of the Sierra Parima, and eventually, after a semicircular sweep of about eight hundred miles, falls into the Atlantic Ocean. The lesser branch, named the Cassiquiare, or Cassiare, by the Guinans and Maïong-kongs, strikes off at a right angle to the south-west, and continues this course for about one hundred and twenty miles, direct to the Rio Negro, a tributary to the great Amazon, and joins the former river about six miles above San Carlos; thus connecting the two great basins of the Orinoco and the Amazon.

We entered the Rio Negro or Guainia, as the Indian tribes call its upper course, on the 4th of March, and continued on it for about seventy miles, in a south south-east direction, passing the Venezuelan and Brazilian boundary forts, San Carlos, and San José de Marabitanas, and found our-

¹⁴ SCHOMBURGK's, Interior of Guiana.

* FRAY PEDRO SIMON, p. 481; vide HUMBOLDT's *Peru Narr.* vol. v. p. 508.

¹⁴ selves, on the 10th of March, opposite the junction of the Vaupes or Ucayari with the Rio Negro. The Vaupes divides near its mouth into two branches, forming a low island about five miles long. Just below the southern point of the island the river has high banks, and is narrowed in by two ledges of rocks, to a width of four hundred yards, but scarcely has it overcome this impediment when it expands again, like a basin, to upwards of a mile in breadth, with islands near both banks, and studded with rocks.

The prospect here is very lovely; in the distance to the south south-east is the group of peaked mountains named Wauari-mapau; nearer are some isolated hillocks, which rear their heads out of the plain, while the foreground is animated by several little cottages erected on the islands and banks of the river, surrounded by Plantain and Banana trees, above which the graceful Paripa or Pirijao Palm* raises its pinnated leaves. The river Cocobixi here joins the Rio Negro from the south, while almost immediately opposite, on a projecting point of the eastern bank, stands the lonely chapel of Santa Barbara, raising the peaceful emblem of Christianity even in these sequestered wilds, above the broad river which foams and flows at its foot.

Such is the scenery at the spot in which the Rio Negro crosses the equator. More than fourteen months had elapsed since I had before traversed this parallel, five hundred miles further to the east; and, although but an imaginary line, we cannot help attaching some interest to the great circle, to which we are accustomed to refer our chief geographical measurements. A low hill, about two miles south of the chapel of Santa Barbara, on the western bank, would, according to my reckoning, be exactly on the equinoctial line; and in the absence of any other name, perhaps it may be permitted to call it Cerro do Equador.

Below this the river is impeded by rapids and falls, which follow in quick succession, and a steady hand at the helm, and a quick eye, are of the first importance; these excellent qualities we had in our old pilot BERNADO from Xié, and we landed safely towards sunset at San Gabriel, a Brazilian fortress crowning a projecting eminence on the river's left bank.

The small fort upon the hillock is built of stone, and was erected, in 1763, to prevent the incursions of the Spaniards, who came from San Carlos. It mounts six guns, among them two English, and has in ordinary cases a garrison of fourteen men under a commandant who is an Ensign in the provincial militia. The guns were of iron, and three were spiked. When the insurgents, or Cabanos, were in possession of the Lower Rio Negro, the commandant did not consider himself strong enough to defend the fort, and after having spiked three of the cannons he left it to defend itself, and fled over the Venezuelan boundary to San Carlos.

The present commandant was in great dread of an attack from the Indians of the rivers Isuma and Vaupes. A slaving expedition, similar to the one which desolated the villages in the vicinity of the Ursato mountains,

¹⁴ Schomburgk's, *Journal of Geology*.

* *Guilhelma*, *Journal de Botanique*, *Tab. 6*, *Fig. 1*.

"had been sent against the native Indians who inhabit the contested boundaries between the Brazils and Venezuela, and in return for the atrocities there committed, the Indians had threatened to storm San Gabriel, and devastate the villages along the Rio Negro. Such an attack would, at that time, have proved very awkward, when the fighting men from San Gabriel, and the surrounding environs, had been enlisted to proceed up the Isanua on a second expedition, undertaken with the pretext of pressing Indians for the navy, but in fact to secure them as slaves. The trees and shrubs had been cleared away wherever it was thought they might impede an open prospect, and serve as a cover to the enemy, and the few men who had been left at the fort had a most harassing duty to perform. To increase their difficulties and perilous situation, the commandant was short of ammunition, and the whole stock of powder did not amount to twenty pounds. San Gabriel, as well as other places in the magnificent province of Rio Negro, has suffered from the destructive influence of political disturbances. Flourishing villages formerly existed where their name is now alone to be found; numerous boats were then trading between Gram Para on the mouth of the Amazon, and the Upper Rio Negro, an inland navigation of fourteen hundred miles, almost without impediment, and now there is hardly a vessel.

The largest cataract in this river occurs just below the fort; we estimated its fall at about twenty feet, and it is considerable enough to oblige the canoes to be unloaded, and the baggage to be transported for about a mile over land. The view from the foot of this cataract is very lovely; the fortress with mount Arruyabai on the western bank, the river broken up by a number of islets and cataracts, and the mountains of Wameri-mapan, and that interesting hill which we have named Cerro do Equador, unite in forming a picturesque landscape. The black appearance of the water, where it is not agitated and foaming, contrasts strongly with the white banks and the lively green of the trees on its borders.

That kind of boats, which is represented in the view of San Gabriel as ready to enter the surge at the foot of the cataract, is called an Igaritea. Arrived at the cataract, it is drawn by means of ropes through the rushing water, and over the rocks which impede the passage of the river. The canoe of the natives is very different to the Igaritea of the Brazilians—the smallest is a Pakassa, or light boat, merely made of the bark of a tree. In British Guiana, the colonists call those frail boats "wood-skins."

We had to transport our baggage over land to the lower port, or "embareadero," while the empty corial, under the guidance of our pilot, passed the fall in safety, and re-embarked at eight o'clock in the morning; and quickly carried forward by a strong current, caused by the continual rapids of Cujubi, for two hours, we again entered comparatively smooth water, opposite the small settlement of Cumanau. These falls and rapids extend for about twenty miles, and the most dangerous passes are called Poredao, Hurnas, and Cujubi.

A melancholy and utter picture of desolation meets the eye on

¹⁴ 'descending the Rio Negro; houses in ruins, and without inhabitants; the plants clambering over the roofs, and the high bushes and grass before the door. During a journey of several weeks, and over an extent of more than five hundred miles on the Rio Negro, after entering the Brazilian territory, we saw only one native boat, with two Indians in her, who fled as soon as they got sight of our canoe. This desolation, so different to the cheerfulness we had observed in the Venezuelan villages on the Cassiquiana and in San Carlos, is caused by the oppression which the Indians receive from those petty officers to whom the official duties are entrusted, and who compel the Indians to work with no other pay than a slender subsistence. This is sufficient to ruin commerce and agriculture, and cause the desertion of the Indians. For want of hands the inhabitants are obliged to abandon their plantations, and the canoes, deprived of their crews, remain stationary for months together.

With the best wishes of the Government at Para for the object of our expeditions, and an inclination to afford us every assistance, the latter circumstance would have befallen us on descending the Rio Negro, but I had brought with me a crew of Warrans and Macusis, increased by Maiongkongs and Guinaus from the Parima mountains; and independent of the assistance of the natives of the Rio Negro, we reached Marina or Barcellos, in twenty-one days from the time we had left Esmeralda, having made a distance of five hundred and seventy-five miles in boats. We descended the Rio Negro about a hundred miles more, to Pedrero, or Itarendana, and entering the Rio Branco, we ascended that river for about three hundred miles, in its winding course, and eventually reached our starting point, at Fort San Joaquin, after an absence of seven months, during which period we had made a circuit of two thousand two hundred geographical miles, partly over land, partly in boats, and comprising tracts which never before had been trodden by the foot of a white man. We awaited for the setting-in of the rainy season, and inundation of the rivers, and then transported our large canoe, which I had bought in the river Paramu, a tributary of the upper Orinoco, over a short portage of about eight hundred yards from lake Amnen into the Quatata, which communicates with the Rupununi. It soon floated on the latter river, and carried rapidly forward by a strong current, we, on the 17th of June, 1839, approached the Protestant mission at Bartika Point, situated at the confluence of the river Mazaruni with the Essequibo; and the hoisting of flags and firing of guns, gave us a proof of the kind interest which the inhabitants took in our safe return.

Two and twenty months had elapsed since we passed this spot, on our ascent up the Essequibo, and bade adieu to civilized life and its comforts, and after having made a circuit of upwards of three thousand miles, were now, by the blessing of Providence, returning in safety to Georgetown.

¹⁴ Schomburgk's, Interior of Guiana.

THE GREAT CATARACTS OF THE RIVER CORENTYN.

LATITUDE, 4 DEG. 21 MIN. N. LONGITUDE, 57 DEG. 25 MIN. W.

The river Corentyn is not only interesting because it forms the boundary between the British and Dutch possessions in Guiana, but on account of its magnitude and length, it being one of the most considerable rivers between the Amazon and Orinoco: and from the information which I acquired while at the Upper Essequibo, I suppose it to be equal in length to that stream. In 1837 we selected it as the high road to the central mountain-chain, which has been called by the missionaries Acaia and Tummenraque, and the upper part of which, according to the tradition of the Caribs, is said to be inhabited by the Amazons. The treachery of those very Caribs, who by their extravagant accounts had raised our curiosity, prevented our ascent beyond the great cataracts, and anxious as we were to ascertain the existence or non-existence of a republic of females, the accounts of which since the sixteenth century have excited the greatest interest, it was yet impossible to realize our wishes. We are in the present times too well acquainted with the truth not to remark in those accounts, which have been transmitted to us by the early historians, a desire to adorn whatever related to the New Continent with the most marvellous stories. It is, however, extraordinary, that if the tradition originated with the Europeans, that it has not only remained, but is even now adopted by several Indian tribes in Guiana, and the Caribs of the rivers Corentyn, Essequibo, and Rupununi; they in the gravest manner declare, that these separate hordes of females, or Worisamacos, still exist at the upper part of the Corentyn, in a country called Marawonne. The locality where they are said to live was so well described to me, that the Carib, from whom I had the information, assured me, that when we should have passed high above the cataracts, to that part where two huge rocks called Poimoco and Surama rise from each bank of the river, and bound it like a portal, then we might consider ourselves in the republic of women.

It was not decreed that we should get beyond a certain point. After we had passed a turn which the river makes in latitude 4 deg. 22 min. N. we observed several hills on both sides; half an hour's further progress, and we found ourselves in apparently a large basin, surrounded by hills from sixty to one hundred feet high. The river was now broken up into torrents, the white flakes of foam, which came floating down as if to give us welcome, the thundering noise of the falling waters, and a cloud of mist which hung over the southern hills, all told in an intelligible voice that some great scene of nature was before us. This basin was the furthest extent of our ascent up the river Corentyn in boats; for the Caribs, who formed our crew, refused to go further, and we were ultimately obliged to return without having paid a visit to the Wori-amacu.*

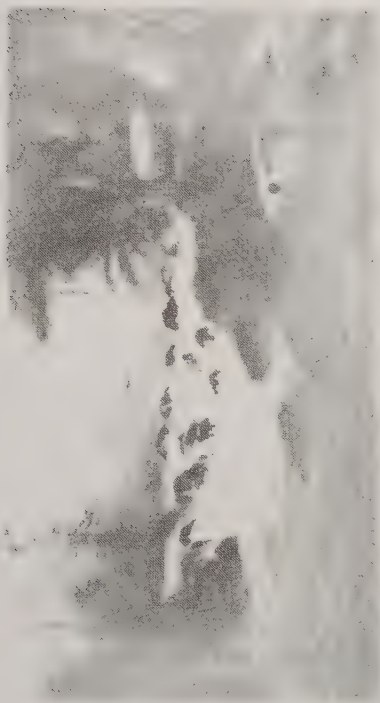
14 SCHOMBURGK'S Interior of Guiana.

* Two years afterwards I learned that the Caribs who accompanied us in that expedition, believed firmly in the existence of these women, and having persuaded themselves we intended to go thither, they became afraid of being detained for more than nine months among them, which determined them neither to show us the passage by which we could have reached the cataracts, nor accompany us any further. We ascribed this unwillingness to their superstition.

"I followed a party of Indians who appeared acquainted with this place, and after some labour and wading, reached a branch of the river which divided itself into two channels. The western branch formed a fall, and the opening prospect on reaching its head was indeed beautiful; the water rushed, at an angle of sixty degrees, into a valley formed by gigantic piles of rocks; at our feet foamed the turbulent water, dashing its spray against the rocks that impeded its course: but the most splendid object was a cascade on the opposite side of the chasm. The rocks over which the water fell, were clothed with a species of *Lucis*, a water-plant, the pendulous branches of which were often five and six feet long, and the whole resembled a rich carpet: the various tints of green, the strong contrast of its flowers, and the foam of the water which rushed over it, made the scene exceedingly beautiful. We estimated the height of the fall at twenty-five feet, and that, on the top of which we stood, at thirty feet; they are almost opposite to each other, but a third, more voluminous, is formed by three channels of the river uniting at the head of the cataract, and at their junction, their further progress being obstructed by a huge block of granite, the water forces a passage for itself, and thence precipitates headlong into a chasm full forty feet below. A large rock stands out in relief, and has been fancifully compared by the Indians to a thigh-bone, and from this resemblance it has received the name of *Woteto-tobo*.

The westernmost cataract is on a grander scale. Some of our party having visited it, and being quite enthusiastic in its description, we resolved to proceed thither; and after climbing over, and crawling round numerous blocks of granite, we stood at the head of the largest fall I had before seen in Guiana. The huge mass of water, and the velocity with which it precipitates itself over the ledge of rocks to a depth of upwards of thirty perpendicular feet, causes the spray to form the cloud we had observed. I stood surprised—the sight of the foaming waters below, the unceasing noise of the cataract, which made every attempt fruitless to communicate my feelings to my companions, rendered the impression of this scene powerful almost to oppression. I became giddy, and retired quickly to prevent myself from joining the dance of the whirling, white-crested billows. I have stood in much more perilous situations without ever feeling the slightest sensation of vertigo, and I ascribe it in the present instance to those masses of water unceasingly rolling in the abyss below, which seemed to urge me to follow them, a feeling which the same sort of scene had likewise communicated to my companion, Mr. REISS.

I was anxious to see the fall from below, and as we could not reach it in any other way, we had to climb over piles of rocks, or to seek a path across chasms, the trunk of a fallen tree serving us frequently as a bridge, while at other times we let ourselves down to the next ledge of rocks by means of lianas. Under our feet we heard the rolling of the streams, which forced a way through immense cavities. The spray, which was driven into the air by the fall of the water of the great cataract, descended in drops like a heavy summer shower, and the constant moisture thus produced, covered rocks and trunks of trees with a luxuriant vegetation.



19 Itabru and Christmas Cataracts on the River Berbie.

"Disturbed by our approach, thousands of swallows rushed from the cavities formed by the rocks, encircled the cloud of spray in their flight, and hovered over the cataract. Before I reached the foot of the fall I was as wet as if I had been in a heavy rain, but the view from that situation richly recompensed me for this trifling inconvenience. The sun being to the west, I saw large spots adorned with all the colours of the rainbow, forming themselves in the spray, and vanishing in order to reappear the next moment.

The Indians named this cataract Wanaré-woun-tobo; we called it after General Sir JAMES CARMICHAEL SMYTH, the late much lamented Governor of British Guiana, who always took the liveliest interest in these exploring expeditions, and whose kindness and attention during the time he presided over the colony as representative of his Sovereign, have been registered with gratitude in my heart. On the eastern cataract which I have described, we bestowed the name of Sir JOHN BARROW, President of the Geographical Society of London.

ITABRU, AND CHRISTMAS CATARACTS,

ON THE RIVER BERRICE.

LATITUDE, 4 DEG. 49 N. LONG. 53 DEG. W. AND LATITUDE 1 DEG. 12 N. LONG. 57 DEG. 51 W.

I HAVE already alluded to the difficulties which we met with in our ascent up the river Berrice. We passed the first rapid on the 13th of December, 1837, and in the afternoon arrived at a point where the river, hemmed in on both sides by ledges of rocks, forms an entrance to a natural basin, bordered by hills: it is followed by a second, the entrance to which, through barriers of rock, is only eighteen yards wide; the basin spreads in the form of a curved lozenge, and is upwards of five hundred and thirty yards long, from west to east, by three hundred yards wide, with a depth of ten fathoms. At its northern point the river rushes violently over a dyke of rocks, and forms the cataract Itabru. I at once saw the impossibility of getting the loaded corials over the fall, and orders were consequently given to unload and transport the baggage to the head of the cataract. We selected a spot for our camp on the river's left bank, near the foot of the cataract, a highly picturesque situation, as it afforded a prospect over the remarkable basin, which appeared as if it were perfectly "land-locked," to use a nautical term, being encompassed by hills from two hundred to six hundred feet high. Huge blocks, some consisting of light green chert, others of decomposing clay-stone porphyry were lying in the greatest confusion on the banks, and their surfaces smooth as glass, being covered with a crust of oxide of manganese, added to the peculiarity of the scenery. A large block of this description rises at the foot of the cataract, about ten feet out of the water, against which the stream dashes with the greatest fury. On the morning of the 15th of December we conveyed the last corial over the cataract, but as the river continued to be impeded by rapids and cataracts, our progress was slow, and after two days of the most fatiguing

11 See Appendix, Letter 21 to 26.

" labour we were only five miles distant from Itabru. Our advance on the 18th of December was of short duration, for while turning round a sudden bend of the river, a series of formidable cataracts and rapids lay before us. On examination I found that they extended for upwards of a mile and a half, and that besides five cataracts, we should have to pass several rapids before we came to a place where we could embark again. I decided therefore to have the baggage carried over the different ledges of rocks which cause these falls, and to drag the corials after. In order to effect this, we had to sling our baggage on poles, and raise it over blocks which were occasionally ten feet high. Where the nature of the dyke permitted it, rollers were placed, and the corials, or canoes having been put upon them, we dragged them by main force over these ridges. As if to increase our difficulties, the Wacawais and Macensis, whom we had engaged in the river Berbice, and who formed part of our crew, deserted us.

Christmas-day approached while we were still at these cataracts, toiling to overcome the impediments which they caused to our further progress. We enjoyed this sacred day in our peculiar manner, and allowed the Indians to partake of our better fare; and, as we could not ascertain what might be the native name for these formidable impediments, the proposal to call them "Christmas Cataracts" was gladly adopted.

We re-embarked at the head of the southernmost of these cataracts, on the morning of the 28th of December, and as the details of our journey up the Berbice have been related elsewhere,* my limits do not permit me to dwell on it further than a few words concerning the most striking incidents. No human being appeared for centuries to have inhabited these regions, and we had frequently to struggle for every foot which we advanced, so thickly was the river overgrown. Unable to procure fresh supplies of provisions, we were reduced to want, and were put for several weeks upon an allowance of six ounces of rice per day, and the game which chance led into our hands. The Caribs in our crew, as they saw that I was determined to continue, plotted to surprise us by night, and to take away the canoes, leaving us to our fate. Their intention was discovered, and they deserted us that very night, preferring to return on foot, the way they had come, to advancing further. We ultimately reached a path, on the 22nd of January, 1838, which leads from the Corentyne to the Essequibo, crossing the Berbice in 3 deg. 55 min. N. Lat., from whence we marched over land to the Essequibo only nine miles distant, without seeing any thing of the river Demerara, which consequently cannot extend so far, and takes its rise to the north of that path.

Want of provisions, and sickness, obliged us now to retrace our route by the Berbice, and we again reached the uppermost of that series of falls, which we had called the Christmas Cataracts, on the 9th of February. In consequence of the river having been swollen by the late rains, the rocks, which we found bare on our ascent, were now mostly covered, and the falls, from the increased volume of water, more powerful. Our attempt

* See Schomburgk's *Interior of Guiana*.

* *Journal of the Royal Geographical Society of London*, 1837, vol. vii.

to descend the first fall without unloading proved nearly fatal, and we determined to carry the baggage over land as we did during our ascent, while we were still obliged to hazard the corials. Our camp was stationed on a small island, near one of the most dangerous cataracts, and we watched at its foot for the descent of the corials. It is an exciting scene when once the corial is in the current, shooting along with the swiftness of lightning; she arrives at the edge of the cataract, and balancing for a moment, she plunges headlong into the surge below, dashing the spray on either side against the rocks that bound the passage; she then rises, and again obeying the helm of the intrepid steersman, is carried forward by the increased current. A mistake on the part of the pilot, or if the crew do not act in strict obedience to his orders, would cause her to split by coming in close contact with those rocks which she appears almost to touch in her descent. My own corial was the last which was to descend the dangerous cataract, when Mr. Reiss, a young man of talent and courage, and who accompanied the expedition as a volunteer, expressed his desire to descend in her with the Indians. I remonstrated with him, as he was not an experienced swimmer, but my advice was not taken. I proceeded over land to the foot of the cataract, to witness her descent, and when the corial came in sight, the first object that struck me was Mr. Reiss standing on one of the thwarts of the corial, when prudence dictated that he should sit down. From that moment to the catastrophe, not two seconds elapsed. The corial was directed to a point where the fall was very precipitous. The shock, when her bow struck the surge, caused Mr. Reiss to lose his balance; in falling he grasped one of the iron stanchions of the awning. The corial was upset, and in the next moment her inmates, thirteen in number, were seen struggling with the current; and, unable to stem it, were carried with rapidity towards the next cataract. My eyes were fixed on poor Reiss: he kept himself above water but a short time, sunk, and reappeared; and when I hoped that he might reach one of the rocks, the current of the next rapid seized him, and I fear he came in contact with a sunken rock; he was turned completely round, and disappeared in the whirlpool at the foot of the rapid. Immediately I could muster men enough to guide a corial, we commenced a most diligent search, in which we were assisted by some who had manned a second corial. For two hours all our endeavours were fruitless. At length we found his body, in a direction where we least expected it, and where an under current must have drifted it. Life was extinct: nevertheless, the usual means for recovering drowned persons were resorted to, but in vain. The Indians had saved themselves by swimming, and he alone paid with his life for the rash attempt.

Two aged trees stand on the western bank of the river, opposite to the place where our poor companion was drowned, whence I desired a path to be cleared to a rising ground, which the water, even when at its greatest height during inundations, does not reach. Here, on a level spot, where Mora trees and Palms, the latter an emblem of the Christian faith, form an almost perfect circle, now rises a pile of stones, under which rests our

¹⁴ 'lamented companion to await his Maker's call. A small tablet, which he himself brought in order to engrave his name, and to leave it as a remembrance, in case we should reach the Acaiai mountains and the sources of the Essequibo, is firmly fixed to one of the trees which form the circle, and now bears this inscription,—"*Drowned, 12th Feb., 1837, CHARLES F. REISS, Aged 22 Years.*"

The great danger and difficulty in ascending and descending the rivers of Guiana is familiar to all who have travelled into the Interior. The Missionary BERNAR in his "*Missionary Labours*," thus describes the Shooting of the Falls:—¹⁵ 'The rapids in the interior present a great obstacle to the traveller, and the ascending as well as the shooting them is often attended with danger and loss of life. On one of these occasions I was nearly swamped, a wave striking into the canoe from the side of a sunken rock. On another, the Indians would not allow me to remain in the canoe, as they perceived the descent would be attended with danger. The canoe was therefore unloaded, and the baggage carried overland to the foot of the rapids, which necessarily takes up much time. I then proceeded, and placing myself on one of the rocks, watched the boat with great anxiety. It is an exciting moment when once the canoe is in the current, shooting along with the swiftness of an arrow; she arrives at the edge of the fall, and, balancing for a second, plunges into the surf, where, for a moment, she seems to be buried. She is seen emerging again, and, obeying the helm of the steersman, surmounts the waves caused by the conflicting currents. A mistake on the part of the foreman, or the pilot, at the helm, would cause her either to split by coming in contact with rocks, or to sink, being swamped by the waves. At this time the canoe ran upon a sunken rock; in a moment the Indians were seen in the water; this caused her to get afloat, and in another moment every Indian was again seen in his seat. I feel persuaded that none but Indians are able to escape the danger attending such adventures, and even amongst them it frequently happens that whole families are lost in the attempt.' (*Vide Chap. IV., page 36.*)

WATERTON also mentions the danger of shooting the falls. In descending the Essequibo, he says:—¹⁶ 'That it was much more perilous to descend than to ascend the falls. The place we had to pass had proved fatal to four Indians about a month before. The water foamed, and dashed and boiled amongst the steep and craggy rocks, and seemed to warn us to be careful how we ventured there. I was for all hands to get out of the canoe, and then, after lashing a long rope ahead and astern, we might have climbed from rock to rock, and tempered her in her passage down, and our getting out would have lightened her much. But the negro who had joined us at Mrs. PETERSON'S, said he was sure it would be safer to stay in the canoe while she went down the fall. I was loath to give way to him; but I did so this time against my better judgment, as he assured me that he was accustomed to pass and repass these falls. Accordingly we determined to push down: I was at the helm, the rest at their paddles. But before we got half way through, the rushing

¹⁴ "SOMMERSETT'S" Interior of Guiana.

¹⁵ BERNAR.

¹⁶ WATERTON.

³ 'waters deprived the canoe of all power of steerage, and she became the sport of the torrent; in a second she was half full of water, and I cannot comprehend to this day why she did not go down; luckily the people exerted themselves to the utmost, she got headway, and they pulled through the whirlpool: I being quite in the stern of the canoe, part of a wave struck me, and nearly knocked me overboard.'

3 WATERBURY.

CHAPTER VI.

THE INHABITANTS OF BRITISH GUIANA.—The Aborigines or Indian Tribes.—Their Origin—The Arrawaks—Warrows—Caribs—Accawais—Macnais—Arecurus—Wapisianas—Atorais—Tarinmas—Woyawais, and other Tribes—Personal Description—Tattooing and Painting of their Bodies, Dress, and Ornaments—Form of Huts—Hunting Grounds—Blowpipe—Form of Pottery used—Their Chiefs—Custom at the Birth of a Child—Boring the Lips, Ears, and Nose—Expertness with the use of the Bow and Arrow—Endurance of Pain—Cruelties to Children before Marriage—Polygamy Allowed—Mode of preparing Food—Piwarry and Cassiri drink—Mode of Preparation—Hohihit, or Bandmaster—Warren Dance—Funeral Ceremonies—Obdurate Widows Punished—Ideas of Religion—Manners, Customs, and Superstitions of the various Tribes—Cannibal Indians—Indian Vocabulary. Europeans—Creoles—Portuguese—Africans—Coolies—Chinese—Statement from the Census of 1861—Extracts from Immigration Returns.

"HISTORY informs us, that at the discovery of America by the Spaniards in the fifteenth century, the Europeans found it inhabited by a race of men, who were externally distinguished from all other nations of the known world by peculiarities of structure, and internally by their mental condition, and who, although the greatest analogy existed between them in manners, habits, and occupation, were nevertheless divided into a vast number of tribes, speaking different languages. So great was the similarity in their appearance, that accurate observers, who saw the aborigines of America in provinces far removed from each other and differing in climate and productions, were struck with their surprising resemblance in figure and aspect. PEDRO DE CICCA DE LEON, who had an extensive knowledge of the Indian tribes, says, "The people, men and women, although they are of such a vast multitude of tribes or nations, in such diverse climates, appear nevertheless like the children of one family."

Whence arises then the discordance of languages between different tribes, and which appears to be more considerable in the New Continent than even in Africa? According to the researches of SEEZEN, VATER, and DE HUMBOLDT, there are at least five hundred different American tongues. ALEXANDER VON HUMBOLDT, great alike as a traveller, a philologist, and a natural philosopher, ascribes their differences "to the configuration of the soil, the strength of vegetation, the apprehensions of the mountaineers, under the tropics, of exposing themselves to a burning sun," all of which he considers as obstacles to communication, and contributes, as he thinks, to the remarkable variety of dialects.

This is not the proper place in which to inquire into the cause of the

"above variety, a cause which must continue to operate as long as these languages depend upon oral delivery, and consequently are liable to corruption; but there exists a grammatical analogy, a similarity in their general structure, which make it evident, that however they may differ as dialects, they have a common origin.

To guide the inquirer, however, through the intricacies of this labyrinth, to give him a notion whence that language, and the people who speak it, originated, there is not a vestige of history, not a thread of tradition to afford a clue; and all our knowledge in this respect depends upon hypothetical reasoning. The opinions, which at present have been adopted with regard to this subject, may be divided into three conjectures—

I. Whether they be indigenous to, or coeval with, the Continent which they inhabit?

II. Whether they be of Asiatic origin, first peopling the South Sea Islands, and then emigrating to the Continent of America?

III. Whether they arrived across Behring's Straits and the Aleoutski Islands in the northern part of America, and from thence spread over the Continent?

Many see cause to believe, that the origin of the American languages, and the first germs of the development of the human mind in America, can be sought for nowhere but in that quarter of the globe; but unless it can be proved that the laws of nature are in direct violation with Mosiac records, which expressly say that "God has made man to dwell on all the face of the earth," we must still appeal to that Holy Book for interpretation.

The Bible and Profane History corroborate the narrative that ancient Egypt and Hindostan were invaded by a powerful tribe, who introduced their peculiar customs into the conquered country, built temples and pyramids, and covered them with hieroglyphics. Historians here allude to the Cushites, who, after having erected a splendid empire, were dispersed by the Almighty. They are traced chiefly by the ruins of their mural defences in a north-easterly direction to Palestine; by the relics found in their tumuli, and their peculiar zodiacal signs, to the north of Siberia, where all further traces of them are lost. Similar tumuli, mural defences, hieroglyphic inscriptions, astronomical divisions of time, and zodiacal signs, were used by the civilized aboriginal race of America; and as the geographical position of Behring's Strait, and the Aleoutski Islands, admit the possibility of emigration from Asia to America, we are led to believe that the Toltecas, and Aztecs arrived that way. They were however expelled by succeeding hordes, and during the struggle for occupancy the eastern ramparts may have been constructed, but by subsequent attacks, and the arrival of new hordes, rendered their destruction inevitable. If they obstinately persisted in remaining; they therefore abandoned the country to the conquerors, emigrated southward, and became ultimately extinct. The descendants of the latter savage tribes, the conquerors of the ancient Mexicans, (see page 111) are now found in the North and

¹⁴ 'South America, tribes, who though dissimilar in language, possess philological affinities, and are distinguished by the same predilections for a nomadic, or roving and savage life, and are given alike to war and to the chase.

The Mongolian races of Northern Asia possess a similar disposition : but we may infer a still stronger affinity between the Indians of North America, and the nomadic tribes of Northern Asia, from anatomical evidences. Indeed, the learned Author of the "Physical History of Mankind," Dr. PRICHARD, in alluding to the Mongolian races and the North American Indians, observes, "we do not find that any clearly defined difference has been generally proved between the two classes of nations." The present American race, blended with the Mongolian to the north, spreads over the whole of the New World, and however feeble their intellect may be, they surpass the more civilized, but now extinct races of Mexico, in their full belief of the existence of one Good Spirit, a future life, and the immortality of the soul.

These tribes, to whom a roving life and a home in the forest are essential, contain several subdivisions, differing in customs, habits, and language; but an original affinity runs through them all, and shows that they were once intimately connected. Ancient customs have become modified by change of situation and circumstance, but after so great a lapse of time, the present aboriginal inhabitants of Guiana, and the adjacent territories, still resemble the Americans of the northern portion of this wide-spread race in their manners.

It is difficult, if not impossible, to form a close approximation to truth in calculating the number of aborigines within the boundaries of British Guiana: our imperfect knowledge of the country, and still more their wandering life, increases this difficulty: but I estimate the tribes who inhabit the British territory at about seven thousand. The different nations consist of

Arawaaks, Warraus, Caribs or Caribisi, Acawais or Waccawaiois, Macusis, Arécuuas, Wapisianas, Atorais or Atorins, Tarumas, Woyawais,

The Arawaaks and Warraus live in the coast regions, and their small settlements scarcely extend one hundred miles inland: I reckon their number at about three thousand. The Caribs inhabit the Lower Mazaruni and Cuyuni: about one hundred are located at the Corentyn, eighty at the Rapununi, thirty at the Guidaru, and their whole number (though once the lords of the soil) does not at present surpass three hundred. The Acawais or Waccawaiois inhabit the Upper Demerara, the Mazaruni, and Potaro, and amount probably to six hundred. The Macusis live in the open country, or savannahs of the Rapununi, Parima, and the mountain-chains Pacaraima and Canuku. These who inhabit the British territory amount to fifteen hundred; the whole tribe is probably not less than three thousand; they are bounded to the north by the Arécuuas, who dwell in the mountainous regions and savannahs, at the springs of the Caroni,

¹⁴ SCOTCH'S ROCK, Interior of Guiana.

¹⁴ 'Chyuni, and Mazaruni. They are a powerful tribe, but are more properly the inhabitants of the Venezuelan territory. The Wapishana are a tribe belonging to the savannahs of the Upper Rupununi, and the banks of the Parima; I estimate the number of those who inhabit British Guiana at five hundred. The Atorais, at the Carawaimi mountains, and along their north-western foot, border on the territory of the Wapishana; and, like the Caribs, are fast approaching to extinction, their whole number does not reach to two hundred. The Tarumas inhabit the tributaries of the Upper Essequibo, and amount to no less than five hundred individuals. The Woyawais, a race who live in the regions between the sources of the Essequibo, and the affluents of the Amazons, number about three hundred and fifty; they are on the southern confines of the British territory.

The Indians of Guiana who have come under my notice, are seldom more than five feet four inches in height, and although they on their first appearance convey the idea of strength, a closer inspection will show that they are not muscular. Their head is rather large in comparison with their bodies, and the same may be also remarked as to the trunk of the body in proportion to the limbs; their necks are short, their eyes slope upwards towards the temples, and although the forehead is lower than that of Europeans, it is much superior in its development to that of the Negro. The breast is well formed and strong, especially in the females, and their hands, feet, and ankles, particularly those of the women, are remarkably small. Indeed the inferior extremities are so well proportioned, that they might serve as models, although it must be observed that the foot, from never having been confined by shoes, is rather broad. The females are almost equal in size to the males, but with a few exceptions their embonpoint prevents them from appearing graceful. Their colour is a brownish olive, varying more or less according to the tribe, or whether they inhabit the sea coast, forests, or savannahs. Some of the casts are almost as fair as the Spaniards and Portuguese, while others are of a very dark brown. However dark, their straight, luxuriant black hair, small features, and well proportioned limbs, will always strongly mark the difference between the Indian and the African.

The Indian tribes of Guiana paint their faces and bodies with lines, sometimes straight, sometimes in imitation of the Etruscan or Grecian patterns. A few, and among them the Warrau, Arawak, and Macusis, tattoo their faces slightly. The tattooing generally consists only of a few curved lines at the corners of the mouth, and over the eyebrows, giving to the faces of the females, among whom it is more customary than the men, a characteristic and not uninteresting expression.

Their arms, necks, and ankles are embellished with glass beads, either in imitation of coral, or of a blue or white colour, which they procure through their intercourse with the inhabitants of the coast regions. Necklaces of the teeth of monkeys, peccaris, and divers seeds or shells, are used as substitutes when the former are not to be procured. Their dress is otherwise restricted to a piece of cloth which covers their loins, or the

¹⁴ Homboldt's, Interior of Guiana.

¹⁴ females use a small apron formed of glass beads. When they are able to procure a kind of blue cotton cloth, which in the Colony is called Salempores, they give it the preference to their own manufacture, although the latter is much more durable. The way in which that cloth is worn in a great measure designates their tribe, and the Caribs and Maensis distinguish themselves by the size, and rather picturesque manner in which they throw it over them. The Krishnan, Oewata, and some of the Maiong-kongs, go perfectly naked, but paint their bodies with black and red pigments.

The more populous tribes are subdivided into hordes, connected by consanguinity or marriage. The form of the huts which they inhabit, generally marks the tribe by whom they were erected; and while the hut of the Warran, Arawak, and Carib, is a mere shed, the houses of the Maensis and Wapisianas are frequently built of mud, surmounted by a roof of a pointed form, of almost eastern character. These roofs are neatly thatched with palm leaves, and whatever may be the form of the house, this substance is generally used. The inner structure is simple, and answers all the purposes for which it is intended. The absence of nails and bolts is replaced by banas, or withes. The hut of the Wapisiana is dome-shaped, and his architectural skill in supporting the arches which form the dome is to be admired. These houses, for the most part, have only a ground floor; I noted however, among the Caribs, one storied huts, the communication being effected by a ladder, or wooden steps on the outside.

Several families generally inhabit one of these huts, there is however no dividing partition; the beams from which the hammock is slung, the few stones which constitute the hearth, are tacitly acknowledged to form a claim to that particular spot, which is never usurped by a third, although readily relinquished to a guest or stranger. Every village of consequence possesses a house which is exclusively dedicated to the reception and residence of strangers. It generally occupies the middle of the Indian village, and to it the stranger, who passes the place, resorts and awaits the welcome of the chieftain, and the refreshments which are soon after brought to the weary traveller by the females who belong to the chieftain's household. This house is called *Tapoi* by the Maensis and Wapisianas.

The Oewaks and Krishanas on the rivers Parima and Orinoco, and the Muras on the Amazon, have no fixed habitations; like the gypsies they wander from place to place, and build a temporary shed wherever they promise themselves success in fishing and hunting. No girdle surrounds their loins, no *Perizoma* hides their nakedness, and averse to intercourse with any other being, they consider every individual who does not belong to their tribe, as their natural enemy.

Each tribe has its own hunting ground, and each family its own plantations, which, after the trees have been felled by the husband and grown-up sons, are cultivated by the women. Although the same hut may be occupied by more families than one, there is no community of utensils. These, as may be presumed, are very simple, consisting of many sorts of

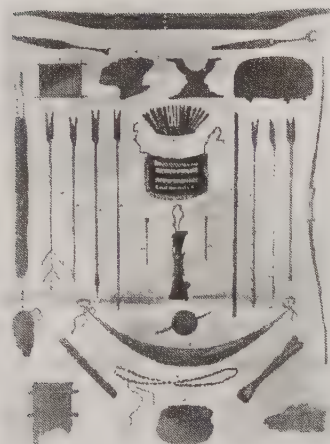


FIG. Weapons and Furniture of the Indians.

“ earthenware vessels of different shapes and size, resembling the Etruscan vases in their form. The women principally fabricate their pottery, and mould the largest vases, containing from twenty-five to thirty gallons, with their hands. They are frequently ornamented with greek, arabesque, and meandering designs. A few low stools carved out of a solid piece of wood, and resembling the wooden pillows or headstools of the Egyptians, the necessary utensils for the preparation of the cassava bread, the weapons for the chase and war, form the furniture of the hut. The Indians usually sit on their hanches, or rest in their hammocks.”

The description of and manner in which the Indians of Guiana use that indispensable weapon, the Blow pipe, is admirably described by WATERTON in his *Wanderings in Guiana*. He says:—“ When a native of Macoushia goes in quest of feathered game or other birds, he seldom carries his bow and arrows. It is the blow-pipe he then uses. This extraordinary tube of death is, perhaps, one of the greatest natural curiosities of Guiana. It is not found in the country of the Macoushi. Those Indians tell you that it grows to the south-west of them, in the wilds which extend betwixt them and the Rio Negro. The reed must grow to an amazing length, as the part the Indians use is from ten to eleven feet long, and no tapering can be perceived in it, one end being as thick as the other. It is of a bright yellow colour, perfectly smooth both inside and out. It grows hollow; nor is there the least appearance of a knot or joint throughout the whole extent. The natives call it Ourah. This, of itself, is too slender to answer the end of a blow-pipe; but there is a species of Palma, larger and stronger, and common in Guiana, and this the Indians make use of as a case, in which they put the Ourah. It is brown, susceptible of a fine polish, and appears as if it had joints five or six inches from each other. It is called Samourah, and the pulp inside is easily extracted, by steeping it for a few days in water.

Thus the Ourah and Samourah, one within the other, form the blow-pipe of Guiana. The end which is applied to the mouth is tied round with a small silk grass cord, to prevent its splitting; and the other end, which is apt to strike against the ground, is secured by the seed of the *Aeneca* fruit, cut horizontally through the middle, with a hole made in the end, through which is put the extremity of the blow-pipe. It is fastened on with string on the outside, and the inside is filled up with wild bees'-wax.

The arrow is from nine to ten inches long. It is made out of the leaf of a species of palm-tree, called *Concourite*, hard and brittle, and pointed as sharp as a needle. About an inch of the pointed end is poisoned. The other end is burnt, to make it still harder, and wild cotton is put round it for about an inch and a half. It requires considerable practice to put on this cotton well. It must just be large enough to fit the hollow of the tube, and taper off to nothing downwards. They tie it on with a thread of the silk grass, to prevent its slipping off the arrow.

The Indians have shown ingenuity in making a quiver to hold the arrows. It will contain from five to six hundred. It is generally from twelve to fourteen inches long, and in shape resembles a dice-box used at

² backgammon. The inside is prettily done in basket-work, with wood not unlike bamboo, and the outside has a coat of wax. The cover is all of one piece, formed out of the skin of the Tapir. Round the centre there is fastened a loop, large enough to admit the arm and shoulder, from which it hangs when used. To the rim is tied a little bunch of silk grass, and half of the jaw-bone of the fish called Pirai, with which the Indian scrapes the point of his arrow.

Before he puts the arrows into the quiver, he links them together by two strings of cotton, one string at each end, and then folds them round a stick, which is nearly the length of the quiver. The end of the stick, which is uppermost, is guarded by two little pieces of wood cross-wise, with a hoop round their extremities, which appears something like a wheel: and this saves the hand from being wounded when the quiver is reversed, in order to let the bunch of arrows drop out.

There is also attached to the quiver a little kind of basket, to hold the wild cotton which is put on the blunt end of the arrow. With a quiver of poisoned arrows slung over his shoulder, and with his blow-pipe in his hand, in the same position as a soldier carries his musket, see the Macoushi Indian advancing towards the forest in quest of Powises, Maroudis, Waracabas, and other feathered game.

These generally sit high up in the tall and tufted trees, but still are not out of the Indian's reach; for his blow-pipe, at its greatest elevation, will send an arrow three hundred feet. Silent as midnight he steals under them, and so cautiously does he tread the ground, that the fallen leaves rustle not beneath his feet. His ears are open to the least sound, while his eye, keen as that of the lynx, is employed in finding out the game in the thickest shade. Often he imitates their cry, and decoys them from tree to tree, till they are within range of his tube. Then taking a poisoned arrow from his quiver, he puts it in the blow-pipe, and collects his breath for the fatal puff.

About two feet from the end through which he blows, there are fastened two teeth of the Accouri, and these serve him for a sight. Silent and swift the arrow flies, and seldom fails to pierce the object at which it is sent. Sometimes the wounded bird remains in the same tree where it was shot, and in three minutes falls down at the Indian's feet. Should he take wing, his flight is of short duration, and the Indian, following the direction he has gone, is sure to find him dead.

It is natural to imagine that, when a slight wound only is inflicted, the game will make its escape. Far otherwise; the wourali poison almost instantaneously mixes with blood or water, so that if you wet your finger, and dash it along the poisoned arrow in the quickest manner possible, you are sure to carry off some of the poison.

Though three minutes generally elapse before the convulsions come on in the wounded bird, still a stupor manifests itself by an apparent unwillingness in the bird to move. This was very visible in a dying fowl.

Having procured a healthy full-grown one, a short piece of a poisoned blow-pipe arrow was broken off, and run up into its thigh, as near as

possible, betwixt the skin and the flesh, in order that it might not be incommoded by the wound. For the first minute it walked about, but walked very slowly, and did not appear the least agitated. During the second minute it stood still, and began to peck the ground: and ere half another had elapsed, it frequently opened and shut its mouth. The tail had now dropped, and the wings almost touched the ground. By the termination of the third minute, it had sat down, scarce able to support its head, which nodded, and then recovered itself, and then nodded again, lower and lower every time, like that of a weary traveller slumbering in an erect position: the eyes alternately open and shut. The fourth minute brought on convulsions, and life and the fifth terminated together.

The flesh of the game is not in the least injured by the poison, nor does it appear to corrupt sooner than that killed by the gun or knife. The body of this fowl was kept for sixteen hours, in a climate damp and rainy, and within seven degrees of the equator; at the end of which time it had contracted no bad smell whatever, and there were no symptoms of putrefaction, saving that, just round the wound, the flesh appeared somewhat discoloured. The Indian, on his return home, carefully suspends his blow-pipe from the top of his spiral roof: seldom placing it in an oblique position, lest it should receive a cast. Here let the blow-pipe remain suspended, while you take a view of the arms which are made to slay the larger beasts of the forest.

When the Indian intend to chase the Peccari, or surprise the deer, or rouse the Tapir from his marshy retreat, he carries his bows and arrows, which are very different from the weapons already described. The bow is generally from six to seven feet long, and strung with a cord, spun out of the silk grass. The forests of Guiana furnish many species of hard wood, tough and elastic, out of which beautiful and excellent bows are formed.

The arrows are from four to five feet in length, made of a yellow reed without a knot or joint. It is found in great plenty up and down throughout Guiana. A piece of hard wood, about nine inches long, is inserted into the end of the reed, and fastened with cotton well waxed. A square hole, an inch deep, is then made in the end of this piece of hard wood, done tight round with cotton to keep it from splitting. Into this square hole is fitted a spike of Coucourite wood, poisoned, and which may be kept there, or taken out at pleasure. A joint of bamboo, about as thick as your finger, is fitted on over the poisoned spike, to prevent accidents, and defend it from the rain, and is taken off when the arrow is about to be used. Lastly, two feathers are fastened on the other end of the reed to steady it in its flight.

Besides his blow-pipe, bow and arrows, the Indian carries a little box made of bamboo, which holds a dozen or fifteen poisoned spikes, six inches long. They are poisoned in the following manner: a small piece of wood is dipped in the poison, and with this they give the spike a first coat. It is then exposed to the sun or fire. After it is dry it receives another coat, and then dried again; after this a third coat, and sometimes a fourth. They take great care to prevent the poison from drying up, and to keep it at the

¹² ' sides, by which means the spike retains the shape of a two-edged sword. It is rather a tedious operation to make one of these arrows complete; and as the Indian is not famed for industry, except when pressed by hunger, he has hit upon a plan of preserving his arrows which deserves notice.

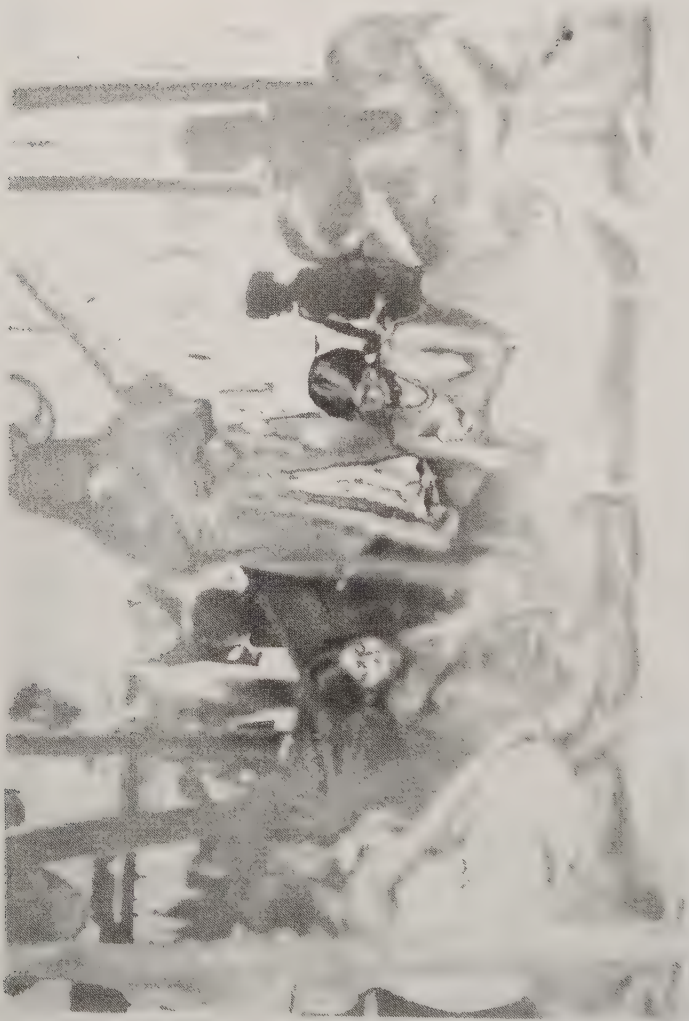
About a quarter of an inch above the part where the Concorite spike is fixed into the square hole he cuts it half through; and thus, when it has entered the animal, the weight of the arrow causes it to break off there, by which means the arrow falls to the ground uninjured; so that, should this be the only arrow he happens to have with him, and should another shot immediately occur, he has only to take another poisoned spike out of his little bamboo box, fit it on his arrow, and send it to its destination.

Thus armed with deadly poison, and hungry as the hyena, he ranges through the forest in quest of the wild beasts' track. No hound can act a surer part. Without clothes to fetter him, or shoes to bind his feet, he observes the footsteps of the game, where an European eye could not discern the smallest vestige. He pursues it through all its turns and windings, with astonishing perseverance, and success generally crown his efforts. The animal, after receiving the poisoned arrow, seldom retreats two hundred paces before it drops.

Thus the savage of Guiana, independent of the common weapons of destruction, has it in his power to prepare a poison, by which he can generally ensure to himself a supply food; and the food so destroyed imbibes no deleterious qualities. Nature has been bountiful to him. She has not only ordered poisonous herbs and roots to grow in the unbounded forests through which he strays, but has also furnished an excellent reed for his arrows, and another still more singular for his blow-pipe; and planted trees of an amazing hard, tough, and elastic texture, out of which he forms his bows. And in order that nothing might be wanting, she has super-added a tree which yields him a fine wax, and disseminated up and down, a plant not unlike that of the pine-apple, which affords him capital bow-strings.²

¹⁴ ' Members of the same tribe frequently form small villages, of from six to ten houses; over such communities a chieftain presides, called YURTORIKUNG in the Carib language, or TOYEPUTORI in the Macusi, whose authority is only acknowledged to its full extent during feuds and wars. His power and influence depend upon his personal superiority in strength and enterprise. The hereditary dignity is derived from the mother; but it is rendered easy for any one who has talents and courage to assume the command on the death of his predecessor, without the advantage of relationship, and his authority is more frequently retained by his undisputed superiority than by any formal election.

It is customary among some nations, before the child is born, for not only the wife, but likewise the husband to subject themselves to a rigid fasting, and to abstain from many viands. The day after its birth, the child is carried into the air without covering on its head, or, as among the Macensis, the head is daubed over with Arnotto or Rucu. Their heads are generally more covered with hair than those of European children, and they learn to





14 speak and to walk at an earlier period than Europeans. They, however, are suckled to a more protracted period, and I have seen children, in appearance five to six years of age, who were not yet weaned. At the birth of the child the husband receives the congratulations of his friends; and the women of the village are attentive to the wants of the mother, who is restored in a few days to her wonted strength and occupations. Twins very seldom occur amongst them; but I have not found any reason to suppose that one is always destroyed. As a strong contradiction to this assertion I have seen Carib and Macusi mothers with twins in their arms. The child is named by the Pinauan, Pitsag, Piché, or conjurer, who receives an offering of considerable value, and the strength of the incantations, which he pronounces on that occasion in a dark hut, corresponds with that of the fee. An unnam'd Indian is supposed to be more subjected to disease and misfortunes than one who has been named. The appellations are generally patronymic. The borings of the lips, ears, and septum of the nose, take place at an early age, and are kept open by pieces of wood. The parents are exceedingly affectionate to their children, and with one or two exceptions, I have never seen them administer personal correction; they will rather bear any inconvenience, or even insult, although I have seen few instances of the latter, than inflict punishments.

The first delight of the boy is a bow and arrows; his little hand grasps the light bow, and with the greatest self-satisfaction and infantine prowess depicted upon his face, he tries his skill, and takes small lizards, locusts, &c., as his mark. The girls assist their mother in the hut to prepare bread, or the favourite drink; or, by means of a primitive spindle, they convert the indigenous cotton into thread for the manufacture of hammocks. They accompany their mothers to the provision fields, and help to cultivate the ground, and are accustomed at an early age to carry the heavy cassava roots to their homes. These wild children of the forest and savannahs are modest, and without being tutored by their mothers, we see the girls reserved towards strangers.

I have not observed many games among the children, but wrestling is frequently practised, and a kind of tennis, for which purpose they use balls made of indigenous Chontelone, or the ears of Maize or Indian corn. When the boys verge from child into man, they have to subject themselves to severe trials of laceration; others make wounds on the breasts of the youths with the teeth of the wild hog, or the beak of the Toucan; there are several other ceremonies which appear symbolical of courage, fearlessness, and endurance of pain, such as being put into a bag where there are stinging ants, and if they endure these without shrinking, they are accepted companions among men. When the girl progresses from childhood into womanhood, among the Warraus, she is deprived of her long hair. Among some tribes, such as the Maules, Mundrucus, and Muras, at the Rio Negro, and Amazon, the poor girl has to undergo a severe trial; her hammock is slung under the roof of the hut, where she is exposed to incessant smoke, besides being subjected to strict fastings. There are many instances where she has paid for a

¹¹ celebrate this period with a feast and dance, at which the young girl appears, ornamented with beads and the white down of birds, the latter of which, by means of a gummy substance, is fixed to her head, shoulders, and legs.

Marriage among these Indians is not accompanied by any religious rites. They are frequently contracted by the parents when infants, in which case the young man is bound to assist the family of his wife till she arrives at puberty; in the intermediate time he is very particular in his attention to her, presents her with beads, and brings her the best of what he has been able to procure at the chase. At the time of marriage he leads her where he pleases, and establishes his own household.

Young men and women, at a more advanced age, consult their own inclinations; a visit to the bride's abode, and some presents are the usual preliminaries: if the suitor meet with favour in the eyes of the parents, the woman is purchased either by gifts or labour; in the latter instance the bridegroom is bound to serve the parents of the bride for a year, or longer. When the marriage takes place, the husband clears a sufficient space of ground for raising provisions: when cleared, it is made over to the care of the woman, who from that time has the whole management of it.

The generality of husbands have only one wife, but polygamy is allowed and practised by all those who have the means of maintaining several wives. I recollect an Arawak chief in the river Berbice, who had five, the youngest of whom was only thirteen years of age, and handsome. The first wife generally pretends to superiority in domestic affairs over the rest, but it is frequently necessary for the husband to exercise his authority in order to restore tranquility in his harem.

On the husband's return from hunting or fishing, his wife prepares his meal, which usually consists of fish or game, the latter frequently boiled in the blood of the animal, and well-seasoned with Capsicums or Cayenne pepper. The male part of the family all eat together, and if the weather permit it, before the door in the open air. Squatted on the ground, the Indian dips his cassava bread into the pot which contains the food, and helps himself with his fingers to that piece of meat, for which he has the greatest fancy. Their meals last but a short time, and every one rises as soon as he has done. The females do not eat with the men, but wait till the latter have finished; it frequently happens that a favourite dish is put aside by the Indian women, which they contrive to hide until a favourable moment arrives in which they may enjoy it unobserved by the men.

Many of the Indian tribes reckon several animals and birds unlawful to be eaten. They abhor our domestic hog, the cow, and fishes of large size. The Caribs are more particular in that respect than any other nation. The delicious fish, the *Sudis gigas*, or Pirarucu, one of the largest which swims in fresh water and which abounds in the Rupumini, and different species of *Siluridæ* are considered unclean by the Maensis and Caribs. In their native woods and savannahs, where they are not degenerated through intercourse with Europeans, the meat of the domestic hog is held in horror. I could never induce Irai, a Carib chief, who was otherwise a sensible

"man, to taste the smallest slice of ham. The herds of wild cattle on the savannahs of the Rupununi and Rio Branco, are unmolested by the Macusi Indians who inhabit these regions, as the flesh is considered unclean. They, however, eat their native hogs, the Peccari and Cairimú. The cassava affords their chief sustenance; the root of this plant (*Jatropha manihot*), which in its natural state is so poisonous, is by a simple process converted into nutritious food. After it has been washed and scraped, it is grated and pressed into an elastic tube, which is called a Marappi, and has been made of the plaited stems of a Calathen. The tube being filled, its upper end is tied to one of the beams in the hut, so that its opposite end, which possesses a loophole, remains a few feet from the ground; a long pole is pushed through the loophole, the shorter end of which is fixed, while the longer being pressed down serves as a powerful lever, and the elasticity of the tube presses the grated material together, and the poisonous juice escapes through the loophole of the plants. The mass deprived of its juice, is then gradually exposed to fire, and some of the flour after it has been sifted, is put upon a piece of fire, and in a few minutes a cake, resembling the oatmeal cake in appearance, is ready. Violent as the poisonous juice of the cassava root proves to be, its magnetic principle is so volatile, that it escapes by being exposed to fire; the Indian forms, therefore, a sauce of the juice, which resembles ketchup or soy.

The Indian females in the Wapishana village, Wain Ticaba, are thus occupied in preparing these cakes, which, after they have been baked, are dried in the sun, and become ultimately so hard, that they may be kept for months. This bread constituted our chief sustenance during our sojourn in the interior, and after we had been accustomed to it for about three or four weeks, we found it as wholesome as white bread.

Yams, Batatas, and Indian corn form the other articles of food which they cultivate in their fields. They are particularly fond of the half-ripe ears of the Indian corn, which they parch. This custom, equally prevails in Egypt. In the evening the women rise first, and after having taken the customary bath, they prepare their husband's breakfast. The Indian eats little at one time, but he eats often; the general hours are sunrise, ten, noon, three, and sunset. The chief meals are breakfast and supper.

The Indians prepare different beverages of divers fruits and Indian corn; but the favourite drink is Paiwori, which is prepared from cassava bread. The bread is for that purpose made thicker, and is carbonized on its surface; it is then broken into pieces, and after boiling water has been poured over it, the women begin to turn it about with their hands, the large lumps being taken out and chewed, and then put into the pot again. This disgusting process, they say, increases the fermentation of the decoction, and renders it intoxicating. Cassiri, which is a fermented liquor from the sweet potato, or yams, is made in a similar manner.

The preparation of the necessary beverage for a drinking feast will occupy the women in chewing cassava for several days. A large trough, in the form of a canoe, is an indispensable piece of furniture in a chief's hut. Although it may contain a hundred or two hundred and twenty

¹⁴ gallons I have seen it emptied in the course of the day by forty or fifty individuals. The cassava bread, which is intended for that use, is piled up round the trough, and having been broken into pieces and covered with hot water, the women continue their filthy work for hours.

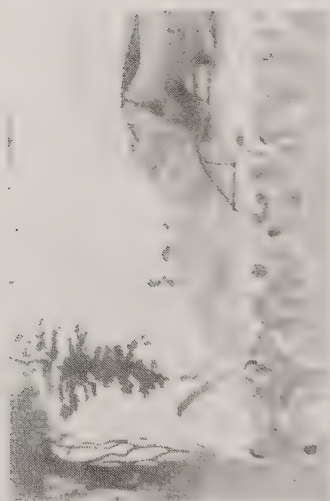
The scenes incident to a *paiwori* of this description do not present much variety. The invitations having been given several days before, the young men of the village from whence the invitation emanated, repair the preceding night to the neighbouring settlements to repeat the summons. The guests assemble the next day, their faces and figures much painted and decorated with feathers, necklaces of monkey and peccary teeth, seeds, &c. The dancers arrange themselves round the trough which contains the intoxicating drink, their bodies bent forwards; the one who follows the leader has a calabash in his right hand, in the left a maraca or rattle; the others seize upon any object which falls first in their way, perhaps a war-club, or gun, or a cutlass; the females their baby, a puppy, or a monkey; and with eyes bent to the ground, the dance commences, the measure of which is in triple time; it is accompanied by a monotonous song, which is strongly marked by stamping with the foot, or knocking the ground with a hollow cylinder of bamboo, surrounded with the seed-vessels of a species of *Cerbera*, which make a rattling noise. The words of the dancers, which are extemporaneous, are frequently repeated; they continue moving round and round, first one way and then the other, or they follow each other in single file; after this measured dance, which is intended to keep off evil spirits from their amusements, the leader of the column approaches the trough of *paiwori*, and taking the calabash from the hand of his neighbour, he dips it gravely into the trough and takes a sip; this is announced by the recommencement of the song, and the rattling of the maraca; the calabash is then presented to the others, who help themselves at pleasure. Several other dances follow, equally monotonous in song and movements as the others.

After the opening ceremony of a *paiwori* feast and dance, which I witnessed at the Carib village Anai, the large canoe in the middle was filled with the intoxicating drink, and surrounded by the dancers, every one bearing some object in his hand, together with their gaudy feather-dresses, and peculiar expression and drollery of their faces, the result of deep libations before the dance commenced, produced a most singular effect.

Anai is situated near the mountain of the same name, and about seven miles from the left bank of the Rupununi, in latitude 3 deg. 56 min. N. The house partly boarded up with spars made of the Manicote palm, served us as a residence for nearly six weeks during our first expedition. The Carib who inhabited it, had surrendered it with the same hospitality to Mr. WATERTON, and to Messrs. SMITH and GULLIVER when they visited these regions. During my last visit in 1838, I found the village abandoned, and the spot which was formerly occupied by the house overgrown with bushes.

Dancing appears to be a practice which belongs as much to the civilized nations of the world, as to those whom we have termed savages; and all the Indians tribes whom I have had an opportunity of becoming acquainted

¹⁴ SCHOMBURGK'S, Interior of Guiana.



with, delight in this amusement. While we were in Orcala, on the Corontyn, we had an opportunity of witnessing a Warran dance, which differs in some respects from that of other Indian tribes. Mr. LAYFIELD, who possesses a woodcutting establishment, in which many of the Indians who live in the neighbourhood are employed, gratified our wish, and the necessary notice was spread through the neighbouring settlements, that at such a day dance would be given at his abode. The previous evening, and when I was just about retiring to my tent, I was forcibly struck by the sound of peculiar music, which at first made me think I heard a Russian horn-band; the sounds, carried by a gentle breeze, swelled and died away until they burst fully again upon my ear; and although there was something wild in it, the cadence softened the harshness, and mellowed it into harmony; the sounds were too varied for an Eolian harp, and our distance from civilized countries precluded all possibility of ascribing the music to a band; at last I recollected the dance which was to take place the following day, and that I had been told that every Warran settlement had its band-master, called in their language Honourr, whose duty it was to train his pupils to blow upon flutes made of reeds and bamboo. I followed the music and entered the settlement, which was only a short distance from our encampment, where I found all the young men collected around old MOROSE, under whose guidance those sounds were produced, which had so much astonished me. The musicians were grouped, each possessing an instrument consisting of a piece of bamboo, in which a small reed on the principle of the mouth of the clarinet, was introduced. According to the size of a slit, the reed produced a higher or deeper sound, and this was powerfully increased by a hollow bamboo called Wanawalli, in some instances five feet long. A waive with his hand, a nod with his head or instrument, were the different signals to those around him to fall in with their instruments, which naturally produced but one tone, but mixed into something like harmony. Who are now the inventors of that peculiar and mechanical music, which a few years ago made so much noise in Europe, and delighted the thousands who heard it? The musical sounds which the Warran produces on his reed flute, are conducted on the same principle as those of a Russian horn-band, and also claim originality.

The next day proved fair, and on our arrival at Mr. LAYFIELD'S, we found a great number of Indian females assembled under some shady Tamarind trees. They were handsomely dressed, according to their fashion; loose garments of flowered calico, or of blue or red cotton stuff, were attached to their waist, where they were fixed, or partly slung round their left or right shoulder; the neck, arms, wrist, and ankles, were richly adorned by red and white beads, while with others, by means of gum, had fixed the white down formerly spoken of, to their faces and arms; many wore pieces of silver or metal in their nose, which completely covered the upper lip, while with others, a bluish line extended from the corners of the mouth, and ended in a figure resembling an anchor. Some had their eyebrows effaced, and a similar line of a bluish colour was painted on the place which they had occupied, and by

¹⁴ The glances of the assembled females were directed towards a neighbouring thicket, from which we soon after saw the young Warraus issue by their Honour. All stooped when advancing, their bodies nearly bent to the ground: each carried his instrument, grasped in the middle; their heads were embellished by large feather caps, that of the band-master being especially distinguished. Some of the men wore strings of the seed of the *Cerbera thevetia* round their ancles, which made a rattling noise whenever the foot was put to the ground. They slowly approached the place which was to be appropriated to their dancing, their movements being directed by the sound of a small whistle, which imitated the cry of a monkey. When arrived, they formed a circle round the dancing place, and another sound of the whistle being given, they laid their instruments on the ground; the men remained motionless in a cowering attitude, while the band-master muttered incomprehensible things until another sound of the whistle roused them all up, when taking their instruments they began to play. By this ceremony the place was devoted to their amusement, and, as with the Caribs and Macusis, the evil spirits were thus enjoined to keep their distance.

Dancing now commenced, but their etiquette is somewhat the reverse of ours; the fair sex are not engaged by the men, who place themselves in the dancing circle, and while they proceed once or twice round, the Warrau woman approaches the man with whom she feels inclined to dance, and placing her hand lightly upon his shoulder, he takes no further notice than assuming the same posture; and their eyes bent to the ground, they step forwards and sideways, and with musical instruments in their left hand, they accompany their dance at the same time by a strain which possesses more music than I have heard among any other tribe. When the dance is about to end, the men shake that foot distinctly three times to which the shells are attached. If her partner be an intimate friend, a sweetheart, or brother, the woman will patiently await the third rattle: but if only a slight acquaintance, or a stranger, she will return to her place with the swiftness of a deer at the first sound. A yell from the men concludes the diversion. The dances of the Warraus are varied; they have a bird-dance, a monkey-dance, and many others in which they attempt to imitate the voice or movements of the animals of which it bears the name; but the most amusing is the Macusi dance, which is worth describing, as it represents the incursions which the Caribs, and other warlike Indian tribes, formerly committed upon the Maensis, carrying their females forcibly away as the Romans did the Sabines. When the dance is about to commence all the women hide themselves, for which they have sufficient time, as the men move first round in a circle. At a signal given by the band-master the men disperse in all directions in search of them: every corner of the house is looked into, every bush or tree in the neighbourhood is subjected to examination. As soon as the hiding place of one is discovered, she is conducted to the dancing place, and ordered to keep the station assigned to her. When the men think they have secured all, they begin to dance round their fair prizes, and at another signal, the women are at liberty to try and make their escape; but the men quickly pursue those whom they have selected

¹⁴ See MULLER'S, Interior of Guiana.





³⁴ for their share, and if fortunate enough to recapture them, they are led back in triumph to the camp, and the toil comes round in the usual step. It is a most animating scene, from the swiftness exerted on both sides; by the female to escape, who if she succeed is loudly applauded by her own sex; by the man to capture, as they express themselves, a Maensi slave.

The Paiwori in taste resembles our malt liquor, and when taken in large quantities is intoxicating, but not, however, the liquorous effects of spirituous liquors; but the scenes which accompany such a drinking bout beggar all description. Disgusting as the preparation of this beverage must prove to an European, when presented to him as a pledge by his host, it will be necessary to conquer whatever aversion he may feel and to drink of it; the contrary would offend the Indian and awaken distrust.

The funeral ceremonies of the Indians of Guiana differ in some respects, according to the tribe to which the deceased belonged. If a man of consequence die among the Warraus, he is put into a canoe in lieu of a coffin, and all which he possessed when alive, such as bows, arrows, clothes, beads, &c. are buried with him: on his heart they place a looking-glass. They frequently kill the favourite dog of the deceased, and put it with him into the grave. He is buried in the house which he inhabited, and a fire kept burning on the spot for many nights. His relations assemble and bewail his loss with excessive and outrageous lamentations, and this is renewed at different times, and continues many months. The widow of a Warrau and his children become the property of his brother or next male relation: however, should the widow refuse him, the incensed relations frequently satisfy themselves by subjecting her to a violent flagellation, after which she may live with whom she pleases.

The ceremonies of the Arawuaks are similar to the above. Upon the demise of a man of some standing, the relations plant a provision-field with cassava roots, and bewail him with sudden outbursts of lamentation. After the period of twelve moons, the relations and friends of the deceased are called together, and the cassava, which was planted at the time of his death being now ripe, the guests are feasted with Paiwori and game. A dance is performed over his grave, and the dancers flagellate each other with whips prepared for that purpose, which they hang up in the hut of the deceased when the ceremony is over. About six moons later, another dance follows, when these whips are buried, and with them the remembrance of the dead, as well as any resentment which they might have felt in consequence of the severe flagellation which they have inflicted upon each other.

The Caribs put the body into a hammock, where it is daily washed by the wives or nearest female relatives; and watched, that it be not molested by beasts of prey or insects. After it has become putrid, the bones are cleansed, painted, and put into a paal or basket, and carefully preserved. If they abandon this settlement, the bones are consumed with fire, and the ashes collected, and taken with them. The women who cleanse the bones are considered unclean for several moons.

The Indians possess some religious principle amongst them, and believe in the immortality of the soul. They acknowledge the

"existence of a superior Divinity, but say, that the urgent business of keeping the world in order, prevents him from paying that attention to man, which he would otherwise afford, and numerous evil spirits are thus permitted to exercise a pernicious influence over mankind, thereby causing sickness, death, and misfortunes. In order to counteract this influence recourse is had to the sorcerer, or *Païman*, who by incantations or magical ceremonies pretends to restore health, or to turn the evil from such of his dupes who pay him well for his supernatural agency. It is therefore evident, that this individual exercises the greatest power over a community, and is regarded with awe and respect."

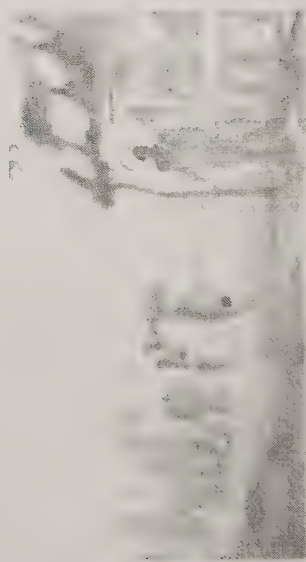
The various tribes which inhabit the Interior of Guiana having been noticed, it remains now only to give a short account of the Cannibal tribes which Humboldt and other travellers relate as existing in the far interior; (their existence by other travellers, however, is generally contradicted.) The following passage is from Humboldt, who in his travels on the Rio Negro, states:—"That Captain JAVITA, was an Indian of great vigour of mind and body. He spoke Spanish with facility, and preserved a certain influence over the neighbouring nations. As he attended us in all our herborizations, we obtained from his own mouth information so much the more useful, as the missionaries have great confidence in his veracity. He assured us, that in his youth he had seen almost all the Indian tribes, that inhabit the vast regions between the Upper Orinoco, the Rio Negro, the Invidá, and the Japura, eat human flesh. The *Davicavanas*, the *Puchiruvavis*, and the *Manitivitanos*, appeared to him to be the greatest cannibals among them. He believes that this abominable practice is with them the effect of a system of vengeance; they eat only enemies who are made prisoners in battle. The instances where, by a refinement of cruelty, the Indians eat his nearest relations, his wife, or an unfaithful mistress, are extremely rare."

A further account of Cannibal tribes is taken from the Journal of the Geographical Society, as found among the Notes of the travellers SMITH and GRILLIFER:—"That high up the Essequibo they fell in with a nation of *Anthropophagi*, of the Carib tribe. The chief received the travellers courteously, and placed before them fish with savoury sauce; which being removed, two human hands were brought in, and a steak of human flesh! The travellers thought that this might be part of a baboon of a new species; however, they declined the invitation to partake, saying that, in travelling, they were not allowed to eat animal food. The chief picked the bones of the hands with excellent appetite, and asked them how they had relished the fruit and the sauce. They replied that the fish was good and the sauce excellent. To which he answered, "Human flesh makes the best sauce for any food; these hands and the fish were all dressed together. You see these *Macoshee* men, our slaves; we lately captured these people in war, and their wives we eat from time to time." The travellers were horrified, but concealed their feelings, and before they retired for the night, they remarked that the *Macoshee* females were confined in a large logie, or shed, surrounded with a stockade of bamboos; so that, daily the fathers,

14 SCHOMBURGK'S, Interior of Guiana.

5 HUMBOLDT.

11 Journal of the Geographical Society.



25 Carib: 3 " v - " near the River Re

"Husbands, and brothers of these unfortunate women, saw them brought out, knocked on the head, and devoured by the inhuman cannibals. Lieutenant GULLIVER, who was *in bad condition*, got into his hammock and slept soundly; but Mr. SMITH, being in excellent case, walked about all night, fearing that their landlord might take a fancy to a steak of white meat. They afterwards visited a cave, in which was a pool of water: the Indians requested them not to bathe in this, or if they did, they would die before the year was out. They laughed at their monitions and bathed; but sure enough were both "deads of the valley" before the year expired."

"In connection with the History of the Aborigines, it may be interesting to observe that many words used in the Carib language, resemble in sound and meaning those in the Oriental dialects, as the following list will show:—

CARIB TERM.	MEANING IN FRENCH, SIMILAR WORDS IN ACCORDING TO RECHERCHES GÉNÉRALES D'HISTOIRE NATURELLE	ORIGIN OF THE WORDS	ORIGIN OF THE WORDS
Lion	... So Lionne ...	... Lion ...	... Lion ...
Yene yeri	... (M) lionne ...	... Lion ...	... Lion ...
Yae yae	... (V) lionne ...	... Lion ...	... Lion ...
Rache	... (M) lionne ...	... Lion ...	... Lion ...
Fack	... (M) lionne ...	... Lion ...	... Lion ...
Yene hall	... (M) lionne ...	... Lion ...	... Lion ...
Hue Hue	... (M) lionne ...	... Lion ...	... Lion ...
Nora	... (M) lionne ...	... Lion ...	... Lion ...
Nandere	... (M) lionne ...	... Lion ...	... Lion ...
Halei tana	... (M) lionne ...	... Lion ...	... Lion ...
Phoua	... (M) lionne ...	... Lion ...	... Lion ...
Pomou yae	... (M) lionne ...	... Lion ...	... Lion ...
Boum boum	... (M) lionne ...	... Lion ...	... Lion ...
Baka	... (M) lionne ...	... Lion ...	... Lion ...
Aka	... (M) lionne ...	... Lion ...	... Lion ...
Xie jai	... (M) lionne ...	... Lion ...	... Lion ...
Kat ad laon	... (M) lionne ...	... Lion ...	... Lion ...

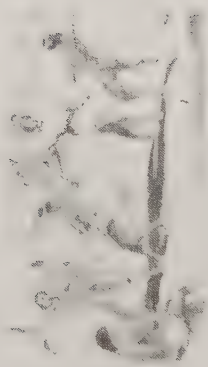
"It is scarcely necessary to remark, that a subject so replete with interest as the present state of the original inhabitants of Guiana, deserves more attention than the philanthropic public of Great Britain has hitherto afforded it. The indifference with which they have been treated, seems almost unaccountable, and I must ascribe it to ignorance, for it is hardly possible that the religious portion of Great Britain should be aware that a race of men exists, who have not only been dispossessed of their territory by Europeans, but have been wholly neglected, and are without provisions for their moral or civil advancement. They are now occupied by British subjects who have never made them any compensation, and export to the mother country to the annual amount of three millions; and import, in British manufactures, upwards of two millions sterling.

The present history of these Aborigines appears to be the finale of a tropical drama, for a whole race of men is wasting away under adverse circumstances. Heartless however is the assertion, unworthy of our enlightened age, that the indigenous race of the New World is incapable of elevation, and that no power...

14 'philosophers, can arrest its gloomy progress towards certain destruction. Such an unfeeling and impious idea could not have originated with any one who had lived among them, or who had studied their character. I speak from experience when I assert, that the Indian is capable of progressive improvement, and that the establishment of social order, European arts, and Christian morals among them is possible. It is unreasonable to expect that men, accustomed to a roving and unfettered life, and unacquainted with our artificial wants, should at once abandon their wandering habits, and adopt a mode of living diametrically opposite to their long established customs, and who but too frequently, where they have been brought in contact with civilization, have not partaken of its blessing, but merely felt its curse.'

The civilized inhabitants of the Colony are comprised chiefly of EUROPEANS and their descendants—CREOLES—PORTUGUESE—AFRICANS—COOLIES, and CHINESE. The position of these races as Settlers, Colonists, and Immigrants, is admirably narrated by Sir W. H. HOLMES, late Special Commissioner for British Guiana to the International Exhibition of London and Paris, in his pamphlet on "*Free Cotton, How and Where to Grow It*," published in 1862, will be found interesting. After describing the Aborigines, Sir WILLIAM proceeds to say:—* 'No one will gainsay me when I assert, that it is the European and his descendants who impart vitality to the colony. From their ranks are drawn the higher officials, the clergy, the bar, the leading planters and merchants. Withdraw for twelve months the Anglo-Saxon element, and British Guiana, with a population of nearly 150,000, instead of yielding an annual export of £1,500,000, exceeding £10 per inhabitant (certainly twice the export of manufacturing England) would become a swampy wilderness, or at best a second Haiti. But as the European is constitutionally unfit for the cultivation of the soil in the tropics, his presence in the colony, unless aided by races better adapted to its climate, would be without beneficial results.

The natives of Madeira, who emigrated in large numbers to the Colony, after the destruction of the vine in their native island, are known as Portuguese; they seem destined by nature for shopkeepers. Industrious, thrifty, patient, and persevering, the moment they have acquired a small capital by labour, they set up as traders. They purchase in the cheapest market, and sell as dear as they can, and by giving a little credit to the improvident Creole, soon have him entangled in their toils. The Portuguese have hitherto secured the whole of our retail business; but as the Coolies and Chinese are preparing to dispute this trade with them, and as these Asiatics are from habit and temperament able to live even more sparingly, it is hard to say to whom success will eventually belong. The Portuguese have, however, proved most useful to the Colony, for, having monopolised all the petty traffic, they have forced other classes to seek a livelihood by other avocations. They are gradually attaining a higher position as landed proprietors, as owning a large portion of the city of Georgetown, and as having shops on every estate and village in the Colony. Although they are most industrious and are much employed on





* "some estates, there is too much of the European element in their constitution to allow of continued exposure without detriment; they are not, therefore, much to be reckoned on as common labourers.

Without entering on debatable ground on the subject of the negro population, I may say, that the continuous industry, so necessary for the cultivation of the sugar cane, is distasteful to the emancipated classes; and that the planter is mainly dependent on the immigrants for successful cultivation. A very small portion of our native population is located on the sugar estates; at least three-fourths of them are either freeholders, or are settled on estates which, having become abandoned (that is, thrown out of cultivation for sugar, cotton, or coffee) were purchased at small prices by the labourers, who subdivided them into small homesteads or village freeholds.

Although the Creoles cannot be depended on for labour on a sugar estate, their habits do not altogether disqualify them for cotton cultivation, either as hired labourers, or to grow it on their own account. To some extent there exists in the native population, one of the elements for the restoration of cotton cultivation in British Guiana. "Give me my heart's desire of Coolies" was the Demerara Planter's remark to Mr. TROLOPE, "and we will supply the world with Sugar." A million of hogsheads is his Millennium, and admirable as this speech may appear, there is no doubt, if the Colony had a sufficient number of this docile and industrious race, that even that fabulous quantity of Sugar could be manufactured. Considering that the sea-coast line of British Guiana exceeds 300 miles in length, and that the country consists of an alluvial soil of matchless fertility, in which all tropical plants attain the highest perfection; it is not difficult to conceive, that, if the Colony were moderately populated, it would rapidly rise to significance. Coffee was the first staple, and, till hostile tariffs and severe duties blighted its cultivation, that berry was a most remunerative crop, of a quality second only to Mocha, or perhaps Mountain Jamaica. Cotton also, preceded Sugar, and, in quality, ranked next to Sea-island. After the last American war, when the duties on cotton were raised, and the demand for the article as coffee, and from similar causes. The Coolie is peculiarly fit for the production of cotton; and he is, moreover, a cotton grower in his own country. But instead of obtaining, according to the late Dr. FORTES ROYLE, (no mean authority) a maximum of 100 lbs. of cotton per acre of an indifferent article in the far interior of India, the cotton grower, in Guiana, obtains 350 lbs. per acre of a very superior cotton which can be shipped at once at a trifling expense. It is easy to talk of taking cotton-seed to countries where labour is plentiful. Experience shows that climate and soil are the more main conditions of success. It therefore becomes much more practical to induce the labourers to remove to the more suitable country; and where is a finer or more extensive field to be found than British Guiana? Nor can it be denied, that the position of the Coolie is much improved by his introduction into the Colony, where at least, those fearful visitations of famine, which are so common in his native land, are unknown. It

may not be amiss here to remark, how rapidly the Coolie improves in a physical point of view. The emaciated creature that arrives from Bengal, is soon a vigorous, steady labourer, and the cringing Asiatic apes but too rapidly the airs and caprices of the free negro. The Creole Coolie, that is to say, the Indian reared in the Colony, is really a fine specimen of a tropical race and far exceeds in vigour and size the parent stock.

The Chinese have been but recently introduced; and it is, as yet, too early to express a decided opinion on them. But, unless they prove an exception to what they are elsewhere, they will be found most useful for agricultural purposes. Those planters who have had the longest trials of these people, do not hesitate to say that they are the best class of labourers yet introduced. With more physical power than the Coolie, the Chinaman is able to undertake heavier work, such as the use of the shovel and trenching demand. The Coolie is content with a rice diet and a good balance in the Savings' Bank. The Chinaman is fond of good food and plenty of it; he works hard, spends liberally, and will have the most substantial meals his means can afford. Unlike the Coolie, he comes to the colony for life, and he has not, therefore, the same object for hoarding as the native of India, who generally calculates on returning to his own country, and saves every cent to carry a long purse to his native land. Hence the large amounts that the Coolies have in the Savings' bank, in Georgetown. Whenever you see a sickly emaciated Coolie, you may generally put his plight down to Rum, for which this race unfortunately shows a great predilection; when you see a wretched worn-out looking Chinaman, the chances are, that opium is the cause; for the celestial brings to the Colony his unconquerable passion for that pernicious drug.

I have thus endeavoured, as shortly as possible, to review the composition of the population of British Guiana. It is, however, necessary to say, that the labour for renovating the land on a large scale into fields of cotton, cannot be found in the Colony. Most of the immigrants are indentured to the sugar estates; and although occasional, and intermitting help may be obtained from our native population, yet the expense of importing the necessary amount of labour from China and India must be calculated upon for the production of cotton. Fortunately, of late years, the demands made by the planters for labour, have been nearly met by the supply. The Colony, in the first place, pays the entire expense of the introduction of the immigrants; but three-fourths of this cost is repaid by the estate to which the labourer is indentured, in five annual instalments. This system is found practically to answer very well, as the Government is thus kept in funds to carry on immigration. The planter can rely on a constant supply of labour, and the immigrant obtains a home, regular and well-paid employment, and is prevented from getting into idle and desultory habits. As a matter of course, in a British Colony there is ample protection for the immigrant. He is placed under the immediate care of an Executive, directly responsible to Her Majesty's Government. Every complaint is investigated by the Magistrate, whose decision is subject

* See W. H. HOLMES' *Memorial on the Coolies*.

† At present the Colony pays one-third and the planter two-thirds.—G. W. B.

* to review before one of the Judges of the Supreme Court. There is an Inspector of Hospitals, for a well-regulated hospital is a condition, without which, no estate can obtain immigrants. Besides the highest current rate of wages, the immigrant is provided with house-room and medical attendance, free of charge; he has also the free use of as much land as he may in reason wish to cultivate as provision ground, after the performance of the moderate amount of work required by the tariff. In every respect, the labourer in Guiana is most favourably situated. The creole, by three days' labour of seven hours, satisfies his requirements for the week; and although the immigrant is not usually capable of the same amount of exertion, moderate industry places him in a position of comparative affluence to that which he occupied in his native land. The squalid misery, so common even in Europe, is unknown in British Guiana.

In speaking of the natives of the Colony, I alluded to the fact, that a large portion of the creole population had become freeholders. Several individuals having purchased an abandoned plantation in common, and subdivided it into such lots as would suit the means of each partner. To such a length has this practice been carried, that the Legislature found it necessary to pass laws for legalising and facilitating the transfer and division of plantations into village lots. About one hundred estates have thus passed into the hands of the labouring population. But a very small portion only of these properties is occupied by cottages, gardens, and provision grounds; large tracts of land are lying waste that might be easily and profitably cultivated, could the proprietors be induced to grow cotton; a cultivation which existed in former years on most of these estates. With judicious means, a successful movement in this direction might safely be predicted; for it would not only prove profitable, but would secure the support of the local government, and of the ministers of the many religious persuasions, into which the population of British Guiana is subdivided. A beginning must, however, be made; and I think it behoves those persons in England to whom cotton is indispensable, to take an active part in fostering a movement which may eventually supply a large proportion of this most necessary staple.

I would suggest, that the freeholders should be supplied with seed of the best quality, with the necessary machinery for ginning and baling; and above all, that agents should be appointed to instruct and advise the farmers. These agents should be authorised to purchase, at equitable prices, either the prepared or unprepared wool. The public roads are in good repair throughout Guiana; and if central establishments were made, to which the growers could take their cotton, either for sale, or to be prepared for market, I believe the principal difficulty in the way of cotton cultivation by the small farmers of the Colony, would be overcome. Besides, if a step of this sort were taken, other owners of abandoned estates would be induced to cultivate cotton on such a scale as their means would allow; and no doubt the Madeirans would soon see the advantage of having portions of their properties under cotton, which, for the greater part of the

* year, requires but little exertion to keep in order, and which, at crop time, would prove highly remunerative.

It is on higher grounds, also, very desirable that such an experiment should be made. The emancipated classes and their descendants, do not, in matters appertaining to industry, advance with that steadiness which their best friends most ardently desire.

I have already stated, that the continued industry requisite for the successful cultivation of the cane, is not to be obtained from them; numbers have already withdrawn from it, and they daily continue to recede. With the exception of the timber trade, which gives employment to men only, no other resource has been found to occupy those who left the sugar estates, particularly the women and children, or to add to the exports of the Colony.

The village system, which is responsible for much of this, has, in my opinion been fraught with evil consequences. The negro, relieved from all supervision, is able to follow the bent of his inclinations without control. A trifling amount of labour procures the few luxuries, which a most fertile soil fails to place within his reach. To a European, the facility with which tropical vegetables, such as plantain, sweet potato, pumpkin, yams, edoes, ochros, pigeon-peas, etc., are produced all the year round, is almost inconceivable. In our marshy lands, the trenches and ditches abound with fish; with these ingredients, and the ever-growing pepper, a small quantity of salt fish or salt meat (the only articles he requires to purchase) a soup or mess called *foo-foo* is made, which, devoured without knife, fork, or spoon, the creole prefers to more elaborate feasts. Nature, too, is equally bountiful in fruits; mangos, bananas, guavas, oranges, shaddocks, pine-apples, and others, grow almost spontaneously, and as there is no winter, one or other of them is always in season. It is therefore, not to be wondered at, that in a climate in which the thermometer stands at about 80 deg. in the shade, where clothing is rather a nuisance than a necessity; where mere shelter from the sun and rain is required, and where nature is so lavish—that in such a country, men without much education and little forethought, should prefer idleness to fatigue, however well rewarded.

It is true they are children of the sun, and labour does not affect them in the tropics, more than it does the European in his more temperate climate. And the creole, when his constitution is unimpaired by early neglect or subsequent intemperance, is, in strength and muscle, fully equal to the European; although it has been remarked by the older inhabitants of the Colony, that the present labouring population are far inferior in physical qualities to their enslaved forefathers, who were carefully nurtured by their owners.

Thus, while the negro is, at best, stationary, observe what others have done. The Portuguese, starved out of Madeira, arrive in British Guiana, not only without means, but they come to a climate, somewhat hostile, they are ignorant of the language, and constitutionally incapable of performing the same amount of work as a native. Yet, as a race, they are wealthy. It is true, they are thrifty almost to parsimony, and money is

* (their sole object, but they are quiet well-to-do citizens, and, in their own line, most useful members of society.

The Coolie lands from India, his entirely worldly wealth consisting in a dozen yards of turmeric cloth, in which he wraps his person. Of small stature, and slightly muscular, he is unequal to heavy work, yet he thrives as an agricultural labourer, and has large sums in the 'savings' bank. It is curious to see the effect of that institution in Georgetown, on the days on which they are open, frequented by the Coolie labourers, who deposit their surplus earnings. They are accompanied by wives, heavily loaded with gold and silver ornaments.

The great object of the Creole is to acquire land, and, I believe, the re-establishment of yeomanry, if not to create a substantial yeomanry than any other element. At present, the villages of the labouring classes are, in general, in a miserable condition. The estates are undrained, the ditches, from want of care, have given way. The slaves being neglected, no longer relieve the soil from the tropical rains; in the wet season, the water rises to the level of the houses, some of which are in a state of ruin, and in a shocking state of disrepair, evidently the result of the indifference of the inhabitants. As a contrast, I can conceive no more favourable position for an industrious working man with a family than that of a small farmer in British Guiana. His cottage, with the climate into consideration, can be built at a trifling outlay. It would, in a few years, be surrounded with ever-bearing fruit trees; fish, when near the sea, is obtained with little trouble. In the immediate vicinity of his residence, his cotton field would yield him two crops annually. He would have no other employment to attend to, except during the crop. And as the picking always comes off in the dry season, it might be considered a sort of jubilee, like that of hop-picking in England, as giving a light and pleasant occupation, even to the younger children, who, when at home, are employed in the garden, or along the back of the cotton field. Every sort of vegetable production might be cultivated.

These remarks are made in no invidious spirit. What I have stated, is so well known to every colonist, that it may be set down as a mere truism: my object is to inquire, why such a state of things exists? Why the Creole population, with greater advantages, have allowed themselves to be surpassed in the affairs of life by other races?

I think this loitering in the rear can be distinctly traced to slavery. Unrequited toil, in days of yore, was the fate of the slave, and, enforced by the lash, that toil became degradation. Labour was without profit to the slave, therefore he used every endeavour to avoid labour; he considered idleness supreme happiness; and when the great measure of emancipation was carried, the majority of the Creole population had no other feeling.

I remember asking a man, who, during the apprenticeship that existed between 1836 and 1838 declined some trifling well paid job, when he would do when he was free, and had to support himself, "Massa, that time me free, me go lie down, sleep whole ix months."

When the slave became a free man, his first desire was also to become

* 'independent ; to be completely his own master. Hence the purchase of estates, in which the newly emancipated invested most of their savings during slavery and the apprenticeship ; and it is a curious and suggestive fact, that they had more money then than at any subsequent period.

Their next desire was to avoid the hateful labour of slavery ; hence the wish to quit the plantations and abandon their work. Their necessities compelled some amount of work on estates ; but it was always contrary to their inclinations. To these feelings, and to the ease with which their daily subsistence is acquired, in Guiana, I attribute their present unsatisfactory condition. There is much to be said on the other hand.

The Negro of British Guiana, is patient, long enduring. It is surprising, how little animosity he exhibits, even to those by whom he may have been ill treated. He is at times generous (especially to his religious teacher). Many of the churches and chapels, so liberally scattered over every part of the settled portions of the Colony, owe their existence to the substantial aid received from him.

The great measure of emancipation, so dearly purchased by the parent country, was meant to be an unqualified boon to the African of the British Empire ; but it was, perhaps, too suddenly passed in favour of a race which had so long been subject to forced labour.

The apprenticeship, benevolently curtailed, was not of sufficient duration to produce the result anticipated. If the tutelage had been prolonged, the negro might, perhaps, have been more sensible of the right use of freedom : he might have learnt that honest industry alone, could secure him the necessities and comforts of life. His children, born free, might have set the example to the parent, of what was expected from free man. This result will now, I fear, require more than one generation to accomplish.

I well remember the 1st day of August, 1838, when the apprenticeship terminated, although there was no violence, yet every relation of life was upset. The whites were taken as much by surprise as the blacks. Planter bid against planter, for the services of the newly-liberated, and the negro wandered from estate to estate in quest of the highest pay and the easiest work. Great unsteadiness was the consequence ; the crops fell to about half of what was produced during the apprenticeship. Nine-tenths, consequently, of those proprietors of plantations who were dependant on their estates were ruined. Indeed, ruin was the rule and not the exception : but none of the planters that I ever knew of, would have wished to restore the old state of things.

They may have fretted and fumed when they saw their properties going to ruin ; but they felt, that slavery was even more hurtful to the white man than to the black, and that the uncontrolled dominion of man over man, was too serious a responsibility to be willingly accepted by those, whose ordinary qualification for such power, was confined to the knowledge of how to grow and make sugar.

Other Colonies suffered in an equal degree. Jamaica the largest, and once the most valuable of the West Indian Islands, is still suffering from the change. The smaller Islands, though reviving from its effects, have

* Sir W. H. HOLMES ON FREE COTTON.

* 'not yet recovered their former prosperity. Barbados is an exception; but, as every inch of land is owned and tilled and the island swarms with population, necessity has proved a wholesome stimulant to industry. Barbadoes, thrives; and although Guiana, with higher wages, is within easy reach, the Barbadian Negro remains, with few exceptions, at home.†

Guiana and Trinidad have only been saved by the great exertions made to obtain an influx of labour, by immigration. Had these not been successful, British Guiana in 1861, would not have exported 10,000 hogsheads of sugar: whereas the crop of the present year 1866, amounted to 75,000 hogsheads, the largest crop ever made in the Colony.‡ But let it also be borne in mind, that still more prosperous would be our condition, if the French experiment of 1848, had been sanctioned by the people of England. Had we, immediately after emancipation, when we had ample means and credit, been permitted to hire free Indian labourers, in the proportion in which the Cubans could not be prevented from buying slaves, the population of Guiana would at this day exceed 600,000; and, if corresponding crops were raised, our shipments would now exceed 300,000 hogsheads. This enormous quantity of free sugar would have done more to undermine slavery than any number of blockading ships on the coast of Africa.

In the Mauritius, the Negro race has been displaced by the Asiatic. The former are hewers of wood and drawers of water, or have retired to distant villages. Something of the same sort occurs in British Guiana. The negroes are rapidly seceding from the sugar estates; but how they dispose of themselves is hardly known. But for the untiring exertions of many pious and zealous ministers, I fear there would be a tendency in the race to retrograde, to leave off clothes, and return to savage life and Obenism. Doubtless there are many exceptions. The head men on estates are faithful and intelligent, many show an aptitude for engineering and the management of steam machinery, and some are faithful ministers and teachers.

The position and prospects of the labouring population of this Colony having been ably sketched by Sir WILKINSON, it remains now to conclude this Chapter with a few remarks and observations upon the all important subject of Immigration. At page 27, the reader is informed that the whole population of British Guiana according to the Census of 1861 was 118,907, exclusive of the Aborigines, which was estimated at about 7,000. From 1861 to the present year 1866, upwards of 27,000 immigrants have been added to the population. Notwithstanding the introduction of such a large number of persons, a general opinion prevails that the population of the Colony at the present time scarcely exceeds that of the Census of 1861, it being supposed that our Creoles are decreasing from various causes, this, if correct, is sadly to be deplored.

Were our planters dependant for the cultivation of their Estates upon the Creole labourers alone, many of the present flourishing plantations would

* Sir W. H. HOLMESON Free Cotton.

† Within the last three years, the population of Barbados has increased 10,000 persons.

‡ In 1865, upwards of 80,000 Hogsheads.

soon cease to be cultivated and become abandoned. The importance of immigration to the general prosperity of this Colony will be once admitted, seeing that Creole labor is quite inadequate to the requirements of our energetic and persevering planters.

The system of Immigration as now existing is operating most beneficially both to the employer and the employed. Upon the arrival of a Vessel with Immigrants from India, China, or Africa, the authorities immediately make arrangements for their distribution, allotment, and indenture upon the various plantations. Upon each estate the Immigrant at once enjoys a comfortable dwelling, regular employment at current wages, and in case of sickness, has the benefit of a well-arranged hospital, which is under the immediate supervision of a competent Medical Inspector. Should the immigrant during his term of indenture consider himself unjustly treated, he can obtain immediate redress from the Magistrate of the district. The rate of wages which the immigrant earns, of course, occasionally varies, but with ordinary care and economy, it is always possible to effect considerable savings. Almost every year immigrants return to their native land in command of large sums of money, the fruit of their toil and industry. In the September of last year, the Ship "Clarence" left this Colony for India with return immigrants, whose savings amounted to £11,243.

The subjoined two Statements made up from the published returns of the Immigration department, will show the number of Immigrants, with the amount of their savings, which have left the Colony for their native land (India) after completing their term of service on the plantations; and the total number of Immigrants introduced into this Colony from 1st January, 1833, to 31st December, 1865.

Year and Month of Departure from the Colony.	Ship in which the Immigrant returned.	Total Number of Immigrants, including women, boys, & infants.	Amount of Savings of Immigrants returned.
1813, May	Lonie Pulley	236	£
1850, November	Lucknow	217	
1851, June	Zenobia	53	
" "	Dido	20	
" "	Lord Eldon	146	
" "	Hemphylæ	165	
" "	Glenziar	311	
1852, March	Lucknow	290	
" "	Thetis	229	
1853, August	Sanford	211	
1854, November	Sandices	59	21,812
1856, October	Empress Eugénie	960	20,543
1857, March	Flora Jacket	315	23,063
" "	Hamilton Mitchell	272	28,560
1858, May	White Eagle	333	27,356
1859, September	Queen of the East	300	26,160
" "	Henry Moore	407	35,082
1862, February	Ghana	7	3,316
" "	Empress Eugénie	419	43,122
1864, September	Guinea	447	50,110
1865, September	Clarence	461	53,869
Grand Total Number of Immigrants which returned to India from 1813 to 1865, and amount of Savings of those which left the Colony from 1854 to 1865		5,713	£ 354,362

A STATEMENT OF THE TOTAL NUMBER OF IMMIGRANTS INTRODUCED INTO THE COLONY OF BRITISH GULANA FROM THE 1ST JANUARY, 1837, TO THE 31ST DECEMBER, 1863.

Year.	1837	1838	1839	1840	1841	1842	1843	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859	1860	1861	1862	1863	Total.
Male.	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Female.	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Children.	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Total.	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

It now remains to shew the actual cost of introducing Immigrants into the Colony, and the actual cost of maintaining them in the Colony.

DR THE IMMIGRATION FUND IS ACCOUNT WITH THE COLONY OF BRITISH GUYANA.

[illegible]

The Indian Immigration Loan Commissioners,			
The Chinese	do.	do.,	and
Bounty Loan	do.	do.	

who raised Loans in accordance with the Ordinances, collected the Contract duties, etc. By the provisions of Ordinance No. 24 of 1864, the duties and responsibilities of the Indian, Chinese, and Bounty Loan Commissioners, have been consolidated, and these functionaries are now called The Consolidated Immigration Loan Commissioners. Owing to the Commissioners having no Secretary or Clerk of their own, (but which it is doubtless most desirable they should have,) the Accounts and Books are at present included with the duties of the Colonial Book-keeper's department.

CHAPTER VII.

THE ANIMAL KINGDOM. *Pelactyl quadrupeds—Reptiles and Insects—The Tapir*
Manatee—Wild Hog—Water-Hans—Cafemondo—Deer—Jaguar—Tiger
Cat—Ant-Bear—Sloth—Potto—Kinkajou—Opossum—Armadillo—Aconri—
Laliba—Crab-Dog—Buck-Dog—Howling-Baboon—Monkeys—Alligator—
Guana—Common, Serpentine and Salamendra—Lizards—Chameleon—
Wood-Slave—Scorpion—Centipede—Rattlesnake—Bushmaster—Labarri—
Camoudi—Coral, Water, and Parrot Snakes—Guma Soake—Turtles—Crabs—
Frogs and Toads—Vampire Bat—Knife Grinder—Lantern Carrier—Fire Fly
—Sand-Flies—Bete Rouge—Mas-in-Bee—Marshbunta—Hardback—Beetle—
Grasshoppers—Walking-Leaf—Tarantula or Bush Spider—Chigoe—Ante—
Groe-Groe Worm—Butterflies

² 'THE new World when discovered by COLUMBUS was found to contain few quadrupeds, and those few by no means equal in size, strength and ferocity, to the animals of Africa or Asia, while some were peculiar to the American continent. Among those most commonly found in Guiana, are—

THE TAPIR, *Hippourie*, or *Bush Cow*, which is about the size of an Alderney cow: the body shaped like the hog, having short legs and tail, and four small hoofs on each foot; head like that of the rhinoceros, with a prominent bone projecting from the forehead, to which its moveable upper lip and nostrils are attached, forming a kind of proboscis; in its upper jaw there are seven grinders on each side, four front teeth, and two sharp tusks—grinders very large, and deeply cuspidated; in the under jaw, six grinders and one tusk on each side, and six fore teeth; ears small, oblong, and pointed; back slightly arched, and covered with short hair of a greyish brown or dun colour. The greatest singularity in this animal is its want of a gall-bladder. It confines itself chiefly to marshes and rivers, feeding upon roots and aquatic plants, and, when pursued, invariably takes to the water, and there like the hippopotamus, is sure of a safe retreat. The flesh of this animal, when roasted closely resembles beef, especially if it be young; the hide, when tanned, makes excellent boot soles, and is highly prized by the Indians for the manufacture of shields.'

¹³ 'THE MANATEE, or *Lamantie*, is a very strange-looking creature, appearing like a curious mixture of several dissimilar animals, the seal and the hippopotamus being predominant. There are several species of Manatee, two of which are found in America and one in Africa, but always on those shores which are washed by the waters of the Atlantic Ocean. The common Manatee is generally about nine or ten feet in length, and is

² MONTGOMERY MARTIN.

¹³ Wood's Natural Hist.

¹⁵ 'remarkable for the thick fleshy disc which terminates the muzzle, and in which the nostrils are placed. It is found in some plenty at the mouths of sundry large rivers, such as the Orinoko or the Amazon, and feeds upon the algæ and other herbage which grows so plentifully in those regions. By some writers the animal is said to leave the water entirely, and to search for its food upon the land, but this assertion is now ascertained to be incorrect. It is, however, in the habit of crawling partly out of the water, and has a strange custom of elevating its head and shoulders above the surface in such a manner that it bears some resemblance to a human being.

The flesh of this animal is said to be well flavoured, and as the Manatee is ecclesiastically reckoned as a fish, together with the whales, seals, and other water-loving creatures, it is permitted as a lawful article of diet on fasting days. When properly salted and preserved by drying in the sun, the flesh of this animal will remain sweet for a whole year. The skin of the Manatee is in great request for the formation of sundry leathern articles in which great strength is required, and the oil which is extracted from its fat is of excellent quality, and is free from the unpleasant rancid odour which characterises so many animal oils.

So valuable an animal is subject to great persecution on the part of the natives, who display great activity, skill, and courage in the pursuit of their amphibious quarry. The skin of the Manatee is so thick and strong that the wretched steel of which their weapons are composed,—the "machetes," or sword-knives, with which they are almost universally armed, being sold in England for three shillings and sixpence per dozen,—is quite unable to penetrate the tough hide. Nothing is so effectual a weapon for this service as a common English three-cornered file, which is fastened to a spear-shaft, and pierces through the tough hide with the greatest ease. The skin of the Manatee is so thick that it can be cut into strips like the too-celebrated "cow-hide" of America, which is manufactured from the skin of the hippopotamus. Before being dressed, the hide of the Manatee is thinly covered with rather stiff bristles.*

THE WILD HOG—Pecari—Bakkir. ¹ Two or three species of wild hogs have been met with in British Guiana, and have been named the bakkir, the pingo, and the peccari; the latter is best known, and may commonly be seen by travellers roving about in large droves, and feeding in the woods on roots and grubs. They vary in size, but measure generally about three feet in length, and are of a greyish brown colour. The tail is very short merely rudimentary; at the lower part of the back there is a peculiar orifice connected with a glandular structure which secretes a most fetid liquid, the use and nature of which are unknown; when a drove is disturbed the animals make a loud grunting noise, and headed by a large male, the patriarch of the family, scamper off at a rapid pace, and as they are armed with short thick tusks their charge is generally avoided by both man and

¹⁵ WOOD'S Natural History.

* In June of the present year (1866) a fine living specimen of this animal arrived at Georgetown from Surinam en route to the London Zoological Gardens. This specimen, although young, measured nearly 6 feet in length, and was fed during the voyage with desiccated milk.

¹ DALTON.

beast. The Indians attack them for the sake of their flesh, which is good eating, but take the precaution of dissecting out carefully the fetid gland on the back. There are two varieties of Peccari or Mexican hog (*Dicotyles torquatus* and *labialis*): the larger species is called by the natives Kaivonnie, and the smaller kind the Abonyia.

Their habits are much the same as the domestic hog, but they do not breed with them, and the females only bring forth one or two young ones at a birth.

There are besides the Peccari one or two species of wild hog seen in the interior, which approach the boar in size and habits. The largest is named the Bakkir and inhabits the mountainous districts, feeding on vegetables and occasionally reptiles.

THE WATER HAAS—*Water Hare*—*Water Hog*.—The Water Haas, Hare, or Hog, is a very common animal here, and congregates in large numbers in the woods and in cultivated districts where they prove very destructive to the produce of the fields. They are excellent swimmers, hence the name given to them by the Dutch, Water Haas (*Hydrochaerus retaria capylara*). They grow to a large size, standing about two feet high; the head is enormously large; the body is covered by a bristly dark brown hair; they have no tail, or a mere trace of one; their feet are more or less webbed, indicative of their aquatic propensities. Four tusks protrude from the jaws. Their skin is exceedingly tough and is about an inch thick. Their flesh is considered excellent food, and they are often hunted. They are readily domesticated, and feed on roots and vegetables, and prey occasionally on fish.

THE COATI-MONDI—*Quacy Quacy*—*Fox of Guinea*.—The Coati-mondi, or Red Coati, derives its name from the reddish-chestnut hue which prevails over the greater portion of the fur, and is only broken by the black ears and legs, the maroon-coloured bands upon the tail, and the white hairs which edge the upper jaw, and entirely cover the lower. The texture of the fur is rather harsh and wiry, and of no very great importance in commerce. Upon the paws are certain excruciating tubercles, which alone would serve to identify the animal were it entirely destroyed with the exception of a single foot. It is extremely active in the ascent and descent of trees, and pursues its prey among the limbs with great certainty. Its food consists of sundry vegetable and animal substances, but the creature seems to prefer the latter to the former.

When the Coati descends a tree, it does so with its head downward, securing itself from falling by hitching the claws of the hinder feet into the inequalities of the bark, and displaying by the act no small amount of flexibility in the jointing of the hinder limbs. It is a nocturnal animal, and does not display its true liveliness until the shades of evening begin to draw on, but lies curled up in a curious but comfortable attitude, its long and bushy tail serving for blanket and pillow. Towards evening, however, the Coati arouses itself from its lethargy, and becomes full of life and vigour, careering about the branches with extraordinary rapidity of movement and certainty of hold, and agitating its mobile nose with unceasing

¹³ 'energy, as if for the purpose of discovering by the snout the presence of some welcome food. It is a merciless robber of birds' nests, and will eat parent, eggs, or young, with equal appetite.

Although possessed of a very irritable temper, the Coati is tamed without difficulty to a certain extent, but is always capricious in its affections, and cannot be trusted without danger. When attacked by men or dogs, the Coati fights desperately, and can inflict such dangerous wounds with its double-edged canine teeth, that it is, although so small an animal, no despicable antagonist.²

DEER.—*Bush Deer*—*Savannah Deer*—*Cane-piece Deer*, and *Wirrebourriciri Deer*.—There are only three or four species of Deer commonly seen in Guiana. ⁴ 'Those are the bush deer, the cane-piece deer, the savannah deer, and a small harmless species known as the antelope or wirrebourriciri. The bush deer (*Cervus rufus*) is the largest, and is of a brownish-red colour, with short curved horns. It is called "Baieu" by the natives, and is seen in the wooded parts of the interior, where, safe from the perils of the hunter, it becomes the prey of the Jaguar and large snakes.

The savannah deer (*Cervus savannarum*) is met with in the large savannahs in herds of from four to six. It differs little in appearance from the cane-piece deer. It is often caught and tamed by the Indians.

The cane-piece deer (*Cervus simplicicornis vel campestris*) resembles the fallow deer of Europe; it is of a fawn colour, and has large branching horns. These animals are very plentiful in the neighbourhood of the estates, and are commonly chased by the sportsman, who hunts them with gun and dogs. They are very fleet, and prove courageous when attacked. They live in the woods and cane-fields, but take to the water readily if hotly pursued, where they may be captured easily if a boat is at hand, for they do not swim fast. The flesh is not equal to the venison of Europe: it is dry, and wanting in flavour.

The fourth species, known as the Wirrebourriciri (*Cervus humilis*) by the Indians, is a small but lively animal, resembling the Antelope, but without horns. It is of a light brown colour above, and whitish below, but has a row or more of white spots or stripes along its sides; when full grown these spots disappear more or less, and the animal becomes uniformly brown in colour. It is very fleet and agile, and has beautiful dark eyes. It often happens that the young of the two last species of deer are captured by hunters, and frequent attempts have been made to domesticate them. They are very docile, and soon become so tame as to eat out of the hand, but they seldom live long in a state of bondage.⁵

THE JAGUAR, or Tiger of Tropical America, is not equal to the true Tiger in size or strength, but rivals them in activity and ferocity, and their depredations among goats, pigs, and cattle, are familiar to most residents upon the plantations. ¹³ 'The Jaguar closely resembling the Leopard in external appearance, and in its arboreal habits, it seems to play the same part in America as the Leopard in the transatlantic continents. It is a larger animal than the Leopard,

¹³ Wood. Natural History.

⁴ DALTON.

¹⁵ and may be distinguished from that animal by several characteristic differences.

In the first place, the tail is rather short in proportion to the size of its owner, and, when the animal stands upright, only just sweeps the ground with its tip. Across the breast of the Jaguar are drawn two or three bold black streaks, which are never seen in the Leopard, and which alone serve as an easy guide to the species. The spots, too, with which its fur is so liberally studded, are readily distinguishable from those of the Leopard by their shape and arrangement. The Leopard spots are rosette-shaped, and their outlines are rounded, whereas those of the Jaguar are more angular in their form. But the chief point of distinction is found in a small mark that exists in the centre of the dark spots which cover the body and sides. In many instances, this central mark is double, and, in order to give room for it, the rosettes are very large in proportion to those of the Leopard. Along the spine runs a line, or chain, of black spots and dashes, extending from the back of the head to the first foot, or eighteen inches, of the tail.

The colour is not quite the same in all specimens. Many Jaguar skins have an exceedingly rich depth of tinting, and are very highly valued, being worth rather more than three pounds. They are chiefly used for military purposes, such as the coverings of officers' saddles in certain cavalry regiments. Sometimes, a black variety of the Jaguar is found, its colour being precisely similar to that of the Black Leopard.

The whole fur seems to take the tint of the dark spots, while the spots themselves are just marked by a still deeper hue. Probably, the cause of this curious difference in tint may be, that in the blood of the individual Jaguar there exists a larger quantity than usual of iron, which metal, as is well known, is found to form one of the constituents of blood. It can be extracted in the metallic form, and resembles very fine sand. In the human blood, late researches have discovered that the blood of the negro is peculiarly rich in iron, and it seems but reasonable that a similar cause will account for the very great variation in the Leopard's and Jaguar's fur.

One of these creatures, which was brought to England by Captain INGLEFIELD, from South America, and placed in the collection of the Zoological Gardens, was so gentle and docile, that it directly controverted the once popular notion that the Jaguar is an irreclaimable and untameable animal. It was a general pet on the voyage, and the following account of its proceedings while on board ship, is given by Captain INGLEFIELD himself.

The Jaguar was named "Doctor," and was as well acquainted with its name as any dog. It was at times rather lazy, and loved to lie at full length on deck, and stretch its limbs to their full extent. It was so perfectly tame that Captain INGLEFIELD was accustomed to lie down by the side of the spotted favourite, using its body as his pillow. When the vessel arrived in harbour, and people were anxious to view the Jaguar, the

¹⁵ creature walked to the stable where it was to be exhibited, merely being led by its chain. It was a remarkable circumstance, that, although the animal was so entirely tame and gentle towards men, and would let them pull it about in their rough play, it could never be trusted in the presence of a little child, nor of a dog. In either case, the animal became excited, and used to stretch its chain to its utmost limit.

Uncooked meat was never permitted in its diet, and, except in one or two instances, when the animal contrived to obtain raw flesh, it was fed exclusively on meat that had been boiled. One of these exceptional cases rather amusing.

At Monte Video, the Admiral had signalled for the captains of U.M. ships to come on board and dine with him. His cook was, of course, very busy on the occasion, and more especially so, as there was at the time rather a scarcity of fresh provisions. The steward had been making the necessary arrangements for the entertainment, and came on board carrying a leg of mutton and some fowls. Just as he stepped on deck, the Jaguar bounced out of his hiding-place, and, clutching the meat and fowls out of the steward's hands, ran off with them. The fowls were rescued by the Captain, who got them away from the robber undamaged, with the exception of their heads, which had been bitten off and eaten, but the mutton was past reclaiming, and so, to the great disgust of the cook and steward, the bill of fare had to be altered.

When "Doctor" received his daily food, he used to clutch and growl over it like a cat over a mouse, but was sufficiently gentle to permit the meat to be abstracted. In order to take away the animal's food, two men were employed, armed with large sticks, one of whom took his place in front of the Jaguar, and the other in the rear. When all was arranged, the man in the rear poked "Doctor" behind, and, as he turned round to see what was the matter, the man in front hooked away the meat with his stick. However the animal might growl over its food, and snarl at any one who approached, it would become perfectly quiet and gentle as soon as the cause of anger was removed.

It was a very playful animal, and was as mischievous in its sport as any kitten, delighting to find any one who would join in a game of romps, and acting just as a kitten would under similar circumstances. As the animal increased in size and strength, its play began to be rather too rough to be agreeable, and was, moreover, productive of rather unpleasant consequences to its fellow voyagers. For, as is the custom with all the cat tribe, the Jaguar delighted in sticking its talons into the clothes of its human playfellows, and tearing them in a disastrous manner. The creature was so amusing that no one could resist the temptation of playing with it, and so the evil was remedied by docking the "Doctor's" claws of their sharp points.

This animal was about two years old when it was brought to England, and died but very lately. Two years after its arrival, Captain INGLESFIELD went to see his old favourite, the "Doctor," and found that the Jaguar

It recognised him in spite of the long interval of time, and permitted him to put its head and to open its mouth.

In its native land, the Jaguar ranges the dense and perfumed forests in search of the various creatures which fall victims to its powerful claws. The list of animals that compose its bill of fare is a large and comprehensive one, including horses, deer, monkeys, capybaras, tapirs, birds of various kinds, turtles, lizards, and fish; thus comprising examples of all the four orders of vertebrated animals. Nor does the Jaguar confine itself to the vertebrates. Various shell-fish, insects, and other creatures fall victims to the insatiate appetite of this ravenous animal.

The favourite food of the Jaguar—when he can get it—is the flesh of the various monkeys. But to catch a monkey is not the easiest task in the world, and in general can only be achieved by leaping upon the prey from a place of concealment, or by surprising the monkeys while sleeping. Sometimes it is fortunate enough to get among a little band of monkeys before they are aware of the presence of the dreaded foe, and then seizes the opportunity of dealing a few fierce strokes of its terrible paw among the partly-awakened sleepers, thus dashing them to the ground, whither it descends to feast at leisure on the ample repast. The fierce hoarse roar of the Jaguar and the yells of terror that come from the frightened monkeys resound far and wide, and proclaim in unmistakable language the deadly work that is going on among the trees.

Pecaries are also a favourite article of diet with the Jaguar, but he finds scarcely less difficulty in picking up a Pecary than in knocking down a Monkey. For the little, active, sharp-tusked Pecary is even more swinishly dull than is usual even with its swinish relatives, and being too thick-headed to understand danger, is a very terrible antagonist to man or beast. It seems to care nothing for size, weapons, or strength, but launches itself as fearlessly on a Jaguar or an armed man as on a rabbit or a child. So, unless the Jaguar can manage quietly to snap up a straggler, he has small chance with a herd of these warlike little pigs, which, if they caught a Jaguar among them, would cut him so severely with their lance-like teeth, that he would ever repent his temerity, even if he escaped with his life.

One of the easiest animals to obtain is that huge and timid rodent, the Capybara, which is not sufficiently swift of foot to escape by flight, nor agile of limb to bound out of reach of its enemy, nor furnished with natural arms with which to defend itself against his assaults. Should it take to the water, and so endeavour to elude pursuit, the Jaguar is in nowise disconcerted, for he is nearly as familiar with that element as the Capybara itself, and thus seldom fails in securing his prey. When the Jaguar strikes down a large animal, such as a Horse or a Deer, it performs its deadly task in a very curious manner. Leaping from some elevated spot upon the shoulders of the doomed animal, it places one paw on the back of the head and another on the muzzle, and then, with a single tremendous wrench, dislocates the neck. With smaller creatures, the Jaguar uses no such ceremony, but with a blow of the paw lays its prey dead at its feet.

THE TIGER CAT.—There are several varieties of the Tiger Cat, and they vary in size from that of the common domestic animal to the bulk of a large dog, but are all more or less marked in the same manner, the ground colour being some shade of grey, and having numerous black stripes on the body. They abound in the forests and other uncultivated regions, and at times approach human habitations, where they prove very destructive to poultry. They are in general remarkable for their long bodies and short legs, and the several varieties are distinguished by their tails, which are of unequal length. Some of the smaller kinds, if caught when young, may be tamed, but are always to be distrusted.

There is one species known as the Black Tiger Cat. It is about the size of a small hound, and is of a black colour with stripes of white, but occasionally these are absent.

One of the largest varieties met with is called here the Labba Tiger Cat. This is an animal so closely resembling the Ocelot (*Felis pardalis*) in size, shape, and habits that it may be regarded as the same animal. Its tail and legs are somewhat shorter in proportion than the same organs of the ordinary Tiger Cats. The colour of the body is greyish-brown, marked with unconnected irregular fawn-coloured spots or patches bordered with black. These animals are very wild and ferocious, and live on birds and small animals, such as the Labba, Acouri, &c.

THE ANT BEAR.—³ 'Ants have their enemies, as well as the rest of animated nature. Amongst the foremost of these stand the three species of Ant-bears. The smallest is not much larger than a Rat; the next is nearly the size of a Fox; and the third a stout and powerful animal, measuring above six feet from the snout to the end of the tail. He is the most inoffensive of all animals, and never injures the property of man. He is chiefly found in the inmost recesses of the forest, and seems partial to the low and swampy parts near creeks, where the Trocky tree grows. There he goes up and down in quest of Ants, of which there is never the least scarcity; so that he soon obtains a sufficient supply of food, with very little trouble. He cannot travel fast; man is superior to him in speed. Without swiftness to enable him to escape from his enemies, without teeth, the possession of which would assist him in self-defence, and without the power of burrowing in the ground, by which he might conceal himself from his pursuers, he still is capable of ranging through these wilds in perfect safety; nor does he fear the fatal pressure of the serpent's fold, or the teeth of the famished Jaguar. Nature has formed his fore legs wonderfully thick, and strong, and muscular, and armed his feet with three tremendous sharp and crooked claws. Whenever he seizes an animal with these formidable weapons, he hugs it close to his body, and keeps it there till it dies through pressure, or through want of food. Nor does the Ant-bear, in the mean time, suffer much from loss of aliment, as it is a well known fact, that he can go longer without food than, perhaps, any other animal, except the land tortoise. His skin of a texture that perfectly resists the bite of a dog; his hinder parts are protected by thick and shaggy hair, while his immense tail is large enough to cover his whole body.

³ 'The Indians have a great dread of coming in contact with the Ant-bear; and after disabling him in the chase, never think of approaching him till he is quite dead. It is perhaps on account of this caution, that naturalists have never yet given to the world a true and correct drawing of this singular animal, or described the peculiar position of his fore feet when he walks or stands. If, in taking a drawing from a dead Ant-bear, you judge of the position in which he stands from that of all other terrestrial animals, the sloth excepted, you will be in error. Examine only a figure of this animal, in books of natural history, or inspect a stuffed specimen in the best museums, and you will see that the fore claws are just in the same forward attitude, as those of a dog, or a common bear, when he walks or stands. But this is a distorted and unnatural position; and in life, would be a painful and intolerable attitude for the Ant-bear. The length and curve of his claws cannot admit of such a position. When he walks or stands, his feet have somewhat the appearance of a club-hand. He goes entirely on the outer side of his fore feet, which are quite bent inwards: the claws collected into a point, and going under the foot. In this position he is quite at ease: while his long claws are disposed of in a manner to render them harmless to him, and are prevented from becoming dull and worn, like those of the dog, which would inevitably be the case, did their points come in actual contact with the ground; for his claws have not that retractile power which is given to animals of the feline species, by which they are enabled to preserve the sharpness of their claws on the most flinty path. A slight inspection of the fore feet of the Ant-Bear, will immediately convince you of the mistake artists and naturalists have fallen into, by putting his fore feet in the same position as that of other quadrupeds: for you will perceive that the whole outer side of his foot is not only deprived of hair, but is hard and callous; proof positive of its being in perpetual contact with the ground. Now, on the contrary, the inner side of the bottom of his foot is soft and rather hairy.

There is another singularity in the anatomy of the Ant-bear, I believe, as yet unnoticed in the page of natural history. He has two very large glands situated below the root of the tongue. From these is emitted a glutinous liquid, with which his long tongue is lubricated when he puts it into the ants' nests. These glands are of the same substance as those found in the lower jaw of the woodpecker. The secretion from them, when wet, is very clammy and adhesive, but on being dried it loses these qualities, and you can pulverize it betwixt your finger and thumb; so that, in dissection, if any of it has got upon the fur of the animal, or the feathers of the bird, allow it to dry there, and then it may be removed without leaving the least stain behind.

The Ant-bear is a pacific animal. He is never the first to begin the attack. His motto may be, "*Noli me tangere.*" As his habits and his haunts differ materially from those of every other animal in the forest, their interests never clash, and thus he might live to a good old age, and die at last in peace, were it not that his flesh is good food. On this account, the Indian wages perpetual war against him, and as he cannot escape by flight,

‘ he falls an easy prey to the poisoned arrow, shot from the Indian’s bow at a distance. If ever he be closely attacked by dogs, he immediately throws himself on his back, and if he be fortunate enough to catch hold of his enemy with his tremendous claws, the invader is sure to pay for his rashness with the loss of life.’

THE SLOTH.—³ ‘ Those who have written on this singular animal have remarked that he is in a perpetual state of pain, that he is proverbially slow in his movements, that he is a prisoner in space, and that as soon as he has consumed all the leaves of the tree upon which he had mounted, he rolls himself up in the form of a ball, and then falls to the ground. This is not the case.

If the naturalists who have written the history of the Sloth had gone into the wilds, in order to examine his haunts and economy, they would not have drawn the foregoing conclusions; they would have learned, that though all other quadrupeds may be described while resting upon the ground, the Sloth is an exception to this rule, and that his history must be written while he is in the tree.

This singular animal is destined by nature to be produced, to live and to die in the trees; and to do justice to him, naturalists must examine him in this his upper element. He is a scarce and solitary animal, and being good food, he is never allowed to escape. He inhabits remote and gloomy forests, where snakes take up their abode, and where cruelly stinging ants and scorpions, and swamps, and innumerable thorny shrubs and bushes, obstruct the steps of civilized man. Were you to draw your own conclusions from the descriptions which have been given of the Sloth, you would probably suspect, that no naturalist has actually gone into the wilds with the fixed determination to find him out and examine his haunts, and see whether nature has committed any blunder in the formation of this extraordinary creature, which appears to us so forlorn and miserable, so ill put together, and so totally unfit to enjoy the blessings which have been so bountifully given to the rest of animated nature; for, as it has formerly been remarked, he has no soles to his feet, and he is evidently ill at ease when he tries to move on the ground, and it is then that he looks up in your face with a countenance that says, “ Have pity on me, for I am in pain and sorrow.”

It mostly happens that Indians and Negroes are the people who catch the Sloth, and bring it to the white man; hence it may be conjectured that the erroneous accounts we have hitherto had of the Sloth, have not been penned down with the slightest intention to mislead the reader, or give him an exaggerated history, but that these errors have naturally arisen by examining the Sloth in those places where nature never intended that he should be exhibited.

However, we are now in his own domain. Man but little frequents these thick and noble forests, which extend far and wide on every side of us. This, then, is the proper place to go in quest of the Sloth. We will first take a near view of him. By obtaining a knowledge of his anatomy, we shall be enabled to account for his movements hereafter, when we see

³ him in his proper haunts. His fore-legs, or, more correctly speaking, his arms, are apparently much too long, while his hind-legs are very short, and look as if they could be bent almost to the shape of a corkscrew. Both the fore and hind legs, by their form, and by the manner in which they are joined to the body, are quite incapacitated from acting in a perpendicular direction, or in supporting it on the earth, as the bodies of other quadrupeds are supported, by their legs. Hence, when you place him on the floor, his belly touches the ground. Now, granted, that he supported himself on his legs like other animals, nevertheless he would be in pain, for he has no soles to his feet, and his claws are very sharp and long, and curved; so that, were his body supported by his feet, it would be by their extremities, just as your body would be were you to throw yourself on all fours, and try to support it on the ends of your toes and fingers—a trying position. Were the floor of glass, or of a polished surface, the Sloth would actually be quite stationary; but as the ground is generally rough, with little protuberances upon it, such as stones, or roots of grass, &c., this just suits the Sloth, and he moves his fore-legs in all directions, in order to find something to lay hold of; and when he has succeeded, he pulls himself forward, and is thus enabled to travel onwards, but at the same time in so tardy and awkward a manner, as to acquire him the name of Sloth.

Indeed his looks and his gestures evidently betray his uncomfortable situation; and as a sigh every now and then escapes him, we may be entitled to conclude that he is actually in pain.

Some years ago I kept a Sloth in my room for several months. I often took him out of the house, and placed him upon the ground, in order to have an opportunity of observing his motions. If the ground were rough, he would pull himself forwards, by means of his fore-legs, at a pretty good pace; and he invariably shaped his course towards the nearest tree. But if I put him upon a smooth and well-trodden part of the road, he appeared to be in trouble and distress: his favourite abode was the back of a chair; and after getting all his legs in a line upon the topmost part of it, he would hang there for hours together, and often, with a low and inward cry, would seem to invite me to take notice of him.

The Sloth, in its wild state, spends its whole life in the trees, and never leaves them but through force, or by accident. An all-ruling Providence has ordered man to tread on the surface of the earth, the eagle to soar in the expanse of the skies, and the monkey and squirrel to inhabit the trees; still these may change their relative situations without feeling much inconvenience: but the Sloth is doomed to spend his whole life in the trees; and, what is more extraordinary, not *upon* the branches, like the squirrel and the monkey, but *under* them. He moves suspended from the branch, he rests suspended from it, and he sleeps suspended from it. To enable him to do this, he must have a very different formation from that of any other known quadruped.

Hence, his seemingly bungled conformation is at once accounted for; and in lieu of the Sloth leading a painful life, and entailing a melancholy and miserable existence on its progeny, it is but fair to surmise that

³ 'it just enjoys life as much as any other animal, and that its extraordinary formation and singular habits are but further proofs to engage us to admire the wonderful works of Omnipotence.

It must be observed, that the Sloth does not hang head-downwards like the Vampire. When asleep, he supports himself from a branch parallel to the earth. He first seizes the branch with one arm, and then with the other; and after that, brings up both his legs, one by one, to the same branch; so that all four are in a line: he seems perfectly at rest in this position. Now, had he a tail, he would be at a loss to know what to do with it in this position: were he to draw it up within his legs, it would interfere with them; and were he to let it hang down, it would become the sport of the winds. Thus his deficiency of tail is a benefit to him; it is merely an apology for a tail, scarcely exceeding an inch and a half in length.

I observed, when he was climbing, he never used his arms both together, but first one and then the other, and so on alternately. There is a singularity in his hair, different from that of all other animals, and, I believe, hitherto unnoticed by naturalists; his hair is thick and coarse at the extremity, and gradually tapers to the root, where it becomes fine as the finest spider's web. His fur has so much the hue of the moss which grows on the branches of the trees, that it is very difficult to make him out when he is at rest.

The male of the three-toed Sloth has a longitudinal bar of very fine black hair on his back, rather lower than the shoulder-blades: on each side of this black bar there is a space of yellow hair, equally fine; it has the appearance of being pressed into the body, and looks exactly as if it had been singed. If we examine the anatomy of his fore-legs, we shall immediately perceive by their firm and muscular texture, how very capable they are of supporting the pendent weight of his body, both in climbing and at rest; and, instead of pronouncing them a bungled composition, as a celebrated naturalist has done, we shall consider them as remarkably well calculated to perform their extraordinary functions.

As the Sloth is an inhabitant of forests within the tropics, where the trees touch each other in the greatest profusion, there seems to be no reason why he should confine himself to one tree alone for food, and entirely strip it of its leaves. During the many years I have ranged the forests, I have never seen a tree in such a state of nudity; indeed, I would hazard a conjecture, that, by the time the animal had finished the last of the old leaves, there would be a new crop on the part of the tree he had stripped first, ready for him to begin again, so quick is the process of vegetation in these countries.

There is a saying amongst the Indians, that when the wind blows, the Sloth begins to travel. In calm weather he remains tranquil, probably not liking to cling to the brittle extremity of the branches, lest they should break with him in passing from one tree to another; but as soon as the wind rises, the branches of the neighbouring trees become interwoven, and then the Sloth seizes hold of them, and pursues his journey in safety.

³ There is seldom an entire day of calm in these forests. The trade-wind generally sets in about ten o'clock in the morning, and thus the Sloth may set off after breakfast, and get a considerable way before dinner. He travels at a good round pace; and were you to see him pass from tree to tree, as I have done, you would never think of calling him a Sloth.

Thus, it would appear that the different histories we have of this quadruped are erroneous on two accounts; first, that the writers of them, deterred by difficulties and local annoyances, have not paid sufficient attention to him in his native haunts; and secondly, they have described him in a situation in which he was never intended by nature to cut a figure: I mean on the ground. The Sloth is as much at a loss to proceed on his journey upon a smooth and level floor as a man would be who had to walk a mile in stilts upon a line of feather beds.

One day, as we were crossing the Essequibo, I saw a large two-toed Sloth on the ground upon the bank: how he had got there nobody could tell: the Indian said he had never surprised a Sloth in such a situation before: he would hardly have come there to drink, for both above and below the place, the branches of the trees touched the water, and afforded him an easy and safe access to it. Be this as it may, though the trees were not above twenty yards from him, he could not make his way through the sand time enough to escape before we landed. As soon as we got up to him he threw himself upon his back, and defended himself in gallant style with his fore-legs. "Come, poor fellow," said I to him, "if thou hast got into a hobble to-day, thou shalt not suffer for it. I'll take no advantage of thee in misfortune; the forest is large enough both for thee and me to rove in; go thy ways up above, and enjoy thyself in these endless wilds; it is more than probable thou wilt never have another interview with man. So fare thee well." On saying this, I took up a long stick which was lying there, held it for him to hook on, and then conveyed him to a high and stately Mora. He ascended with wonderful rapidity, and in about a minute he was almost at the top of a tree. He now went off in a side direction, and caught hold of the branch of a neighbouring tree; he then proceeded towards the heart of the forest. I stood looking on, lost in amazement at his singular mode of progress. I followed him with my eye till the intervening branches closed in betwixt us; and then I lost sight for ever of the two-toed Sloth. I was going to add, that I never saw a Sloth take to his heels in such earnest; but the expression will not do, for the Sloth has no heels.

That which naturalists have advanced of his being so tenacious of life, is perfectly true. I saw the heart of one beat for half an hour after it was taken out of the body. The wourali poison seems to be the only thing that will kill it quickly.

So much for this harmless, unoffending animal. He holds a conspicuous place in the catalogue of the animals of the new world. Though naturalists have made no mention of what follows, still it is not less true on that account. The Sloth is the only quadruped known, which spends its whole life from

³ 'paid uncommon attention to him in his native haunts. The Monkey and Squirrel will seize a branch with their fore feet, and pull themselves up, and rest or run upon it; but the Sloth, after seizing it, still remains suspended, and suspended moves along under the branch, till he can lay hold of another. Whenever I have seen him in his native woods, whether at rest, or asleep, or on his travels, I have always observed that he was suspended from the branch of a tree.'

⁴ 'THE POTTO-KINKAJOU (size of a Pole Cat), a pretty looking animal, is occasionally seen. It is known as Potto, or Kinkagous-Cuvier, and by some is called the Yellow Macanoo (*Tiverra vel cercopithecus caudirostris*). It is about one foot and a half in length. The body is long and narrow, and the tail prehensile; it is covered with a yellowish brown fur, and has a blackish streak along the back; the head is small and round, and the face pointed like the fox. It is of a mild disposition, is nocturnal in its habits, and lives on fruits, honey, &c. It is called by the Colonists, Yamanack; by the Arawaks, Wawula; by the Macusis, Yawarri; by the Warraus, Noari. A new species lately described by RICHARD SCHOMBURGK is the *Nasua vittata*. It is found in the neighbourhood of the Roraima mountains, and in its habits resembles the others of this family.'

THE OPOSSUM—*Yawarri*.—¹ 'There are seven if not more varieties of the Opossum found in Guiana. The species known are—*Didelphis cancrivora*—*guiana*—*philander*—*dorsigera*—*crassicaudata*—*musculus* and *palmata* vel *chironectes variegatus*. The word "Yawarri" is applied to most of them; they vary in size, the largest being about the size of a large cat, and some are little larger than rats. They make a hissing noise when approached, and show their sharp teeth, which are fifty in number, the greatest hitherto observed in quadrupeds. The arrangement of the teeth is as follows; five incisors on each side in the upper jaw, and four in the lower, four molars, three bicuspid, and one canine at each side of the upper jaw, and the same in the lower jaw.

They have long naked ears, and the hair on the body is coarse and of a greyish brown, the legs are blackish; head triangular-shaped, with pointed muzzle, tail naked, and marked in hexagonal divisions except towards the tip, where some bristles sprout. The feet are adapted for plantigrade action, and are marked with callosities on the soles. The toes are armed with strong claws, except the thumbs which are opposable, and have no nails, on the hinder feet.

These singular looking animals have pouches attached at the abdomen of the mother, who cherishes her young ones in this manner until they are capable of supporting themselves. The young animals of this order are generally born so helpless and half formed as necessarily to perish unless provided for in some extraordinary way, and nature, ever fruitful in resources, has contrived this bag or pouch as a sort of half-way station from one state of existence to the other.

They are in universal detestation in consequence of their destructive

‘and thieving propensities, and their offensive appearance and effluvia. They are rarely seen by day, but prowl about during the night, and steal eggs of all kinds, besides carrying off fowls, ducks, &c.

These animals are slow, sluggish, and inactive in their movements; they are often seen on trees, but generally burrow in holes in the ground or in hollow stems, and are very tenacious of life.’

THE ARMADILLO.—¹² ‘This animal is with propriety sometimes styled a hog-in-armour; its head and ears being much like those of a roasting pig, and its whole body covered over with hard shells like shields, sliding in moveable rings, one over the other, except on the shoulders and the rump, which are covered something like turtle, with one solid mass of unmoveable bone, called by some a cuirass and a helmet. Of this creature there are many species in Guiana, the largest being from the snout to the tip of the tail above three feet in length, of a reddish colour, and marked all over with hexangular figures. Its eyes are small, the tail long and thick at the root, and tapering gradually like a carrot towards the point, and is covered over like the body with moveable rings. This animal has four short legs with four toes, armed with two claws on the fore-feet, and five on those behind. The Armadillo walks generally during the night, being seldom seen through the day, and sleeps in burrows under ground, which it makes with great facility, and in which it sticks so fast that the strongest man cannot draw it out, though he were to pull its tail with both hands. When attacked or terrified, it forms itself into a round ball like a Hedge-hog, making its cuirass and helmet meet together, in which are enclosed its head, feet, and whole body. This creature feeds on roots, insects, fruits, birds, &c., and when dressed is a tolerably good dish, though in general by Europeans it is accounted no great delicacy; the Indians are, however, extremely fond of it.’

THE ACOURI.—*Agouti*.—Coney.—¹ ‘The Acouri, (*Chloromys Aenti*) is a species of hare very frequently met with. It is considered as the American type of the genus *Lepus*, and is much sought after as game by the wild native and civilised colonist, who equally enjoy the sport and food it affords. It is about the size of a full grown rabbit, but often grows much larger. Its head is oval. The fore part of the body with the two front legs small in comparison with the posterior. It runs with incredible swiftness, or rather bounds and leaps with singular activity. Its colour is reddish-grey or brown, almost lustrous, but not uniformly the same over all parts of the body; the hair is very soft and smooth. It has twelve teeth in all, the four incisors being remarkably long, and often curved; it has four toes on the fore feet and three on the hind ones; the tail is merely rudimentary, barely an inch long, and naked. In feeding on some substances, such as corn, yams, &c., it sits nearly upright on its haunches, and holding the food between its fore feet gnaws it in a most ludicrous manner; it also feeds on roots, nuts, fruit, and plants, and is often domesticated. The Acouri makes a grunting noise when approached, and if frightened utters a loud scream or cry; it is very timid, but will defend itself when necessary.

¹² requires. It is met with in the forests, and burrows in the ground. The Indians call them almost to their very feet by imitating a sound which attracts them.

A smaller animal closely resembling the Acouri, and belonging to the same family, is known here as the Aconchi (*Cavia vel dasypsecta acuchi*), and has often been confounded with the other. It is, however, scarcely larger than a Ferret, and is characterised by a distinct slender naked tail, about two inches in length. It is called by the natives "Atouri," and has been described as the "Adouri" by an old Dutch writer.* It is of a reddish brown or olive colour, and is mild and gentle in its habits, feeding on nuts and vegetables; indeed, in its general appearance and habits it is very like the Acouri.

THE LABBA—*Paca—Cavy*.—¹ The Labba resembles the Acouri in form, but grows much larger, and is otherwise different in its colour and anatomical structure, and has five toes on each foot. This animal can sit upright, and use its fore paws like the Acouri; the colour is reddish-brown, with three rows of large white spots along its sides; the tail is very short; the eyes are large and lustrous, and approach in beauty to those of the Gazelle. This lovely little animal abounds in the forests, where it burrows in the ground, and prowls about chiefly at night to feed on fruit and vegetables; it is often domesticated, and, like the Cat, it cleans its face with its fore-paws.

The Labba is largely preyed upon by men and animals, but nature has provided for the continuance of the species by rendering it prolific. It can swim, run, and leap, and is not readily surprised. It is only the noiseless step of the wary Indian, as he tracks his way through the pathless woods: it is only his quick eye and ready aim that can secure the nimble Labba, ere he darts away or plunges into his hiding-place into the ground. The traveller, or hunter, often hears its grunting cry and bounding step—nay, can occasionally catch a glimpse of one in the entangled bush, but he seldom or never succeeds in the chase, and the crafty Indian knowing this readily dispenses with his company. The flesh of this little animal is so esteemed that it is a common remark here, that "He who has eaten Labba, and drunk creek water, is sure never to leave the Colony."

THE CRAB DOG, or the *Crabbed Dog*, is notorious for its matchless ferocity, and it is a very uncommon circumstance for one to be taken alive. ¹² The whole upper part of the body of this animal is covered with deep brown hair, having white points, which gives it a greyish brown colour; under the head and neck is a bright grey, because the hairs are very short, and the white part is of equal length with the brown. The muzzle, the under part of the body, and legs, are black, which singularly contrasts with the grey colour on the head and neck.

The head of this animal is very large in proportion to its body, its ears almost form a semicircle, its eyes are large, and its mouth is armed with strong grinders and sharp tusks; it has six cutting teeth in each jaw,

¹² 'four of them hardly rising above the gums. Both the fore and hind feet have five toes, with yellowish claws; the tail is pretty long, and terminates in a point.

The Crab Dog kills and devours every thing that comes in its way, without exception, whether quadrupeds, fowls, or reptiles; and never seeming to be glutted with blood, it murders, even without being hungry, all it can vanquish, which, on account of its courage, activity, and strength, are not a few, though it be not larger than a common cat.²

THE BUCK, or *Indian's Dog*. 'a wretched looking half-starved animal, is a small mongrel with long upright ears and tail, which are seldom or never cut. It is rarely fed, and lives upon less food than, I believe, any animal on record. Yet such a dog will, if roused, hunt for hours, and makes the forest ring again with its cries. If not successful in the chase of Deer, Labba, or Acouri, it returns home panting, torn, and bleeding; but after a drink of water lies down to sleep. No one would suspect from seeing these lean dogs, sitting like spectres on their bony haunches on the prow of some Indian corial, that they could possibly undergo such fatigue. Numerous kinds of hounds have been introduced here, but they are mostly degenerate. The blood-hound, and the Spanish dog, a sort of cross between the former and some other species, answer better than most of the others. They often prove trusty, and are savage watchdogs. The several varieties of dog are made to hunt in this country, and by a little patience and training they can be taught to attack Tigers, Deer, and other wild animals. In the interior Wild Dogs are sometimes seen; these animals somewhat resemble Terriers, and always hunt in packs. The Indians occasionally catch them for the purpose of crossing the breed of their own dogs.²

MONKEYS.—⁴ 'There are no Apes or Baboons, or what are known as true Monkeys, to be met with in Guiana. The several species in this country are distinguished by their not having cheek pouches, and by the absence of callosities on the buttocks. They have, however, long tails, which in several species, as will be noticed, are prehensile, or capable of being twisted round the branches of trees, so as to support their weight. They have, moreover, thirty-six teeth in their jaws; being four grinders more than the usual complement of teeth in the Monkeys of other countries.

They abound in the forests, where they may commonly be both seen and heard by the traveller. They are gregarious in their habits, especially those of the smaller kind. The different species do not congregate in the same troop—each species has a corps or regiment of its own. They are the lords of the forests, living on high branches of lofty trees, where they consider themselves to be tolerably safe, except from the hunter's gun or Indian's arrow, and the ever dreaded wiles and stratagems of their greatest enemy the snake, who disputes with them the dominion of the wooded world. The snakes destroy their young; they coil themselves around the thick stems, and await a timid young Monkey, or glide noiselessly among the leafy branches

⁴ 'to dart suddenly upon young or old, to the immense consternation and jabbering of the whole Monkey family.

Monkeys here feed in their wild state on seeds, fruit, roots, plants, insects, wild honey, and other sweets, but when tamed can be made to eat almost everything, and are remarkable for their enormous appetites, which, apparently, never leads to corpulence or obesity; for who ever saw a fat Monkey? Their spare and active forms are the result of their incessant muscular action. The females generally bring forth one at a birth, and the young Monkey, as might be expected, generally proves a very troublesome little fellow. Some of the females carry their young on their backs, others under their arms. If wounded by the poisoned arrow of the Indians, some species withdraw at once the fatal weapon, but soon fall after the working of the poison.

The Monkeys of this country may be divided into two classes:—1st. Those with tails prehensile. 2nd. Those with tails not prehensile. There are in all, perhaps, about twenty varieties. One of the most common kinds of Monkey with prehensile tail is called here

THE RED OR HOWLING MONKEY, commonly termed *Baboon*—(*Myetes seniculus*.) Nothing can sound more dreadful than the nocturnal howlings of the Red Monkey of Guiana. ³ 'While lying in your hammock in these gloomy and immeasurable wilds, you hear him howling at intervals, from eleven o'clock at night till daybreak. You would suppose that half the wild beasts of the forests were collecting for the work of carnage. Now, it is the tremendous roar of the Jaguar, as he springs on his prey: now, it changes to his terrible and deep-toned growlings, as he is pressed on all sides by superior force: and now, you hear his last dying mean, beneath a mortal wound.

Some naturalists have supposed that these awful sounds, which you would fancy are those of enraged and dying wild beasts, proceed from a number of the Red Monkeys howling in concert. One of them alone is capable of producing all these sounds; and the anatomists, on an inspection of his trachea, will be fully satisfied that this is the case. When you look at him, as he is sitting on the branch of a tree, you will see a lump in his throat, the size of a large hen's egg. In dark and cloudy weather, and just before a squall of rain, this Monkey will often howl in the daytime; and if you advance cautiously, and get under the high and tufted tree where he is sitting, you may have a capital opportunity of witnessing his wonderful powers of producing these dreadful and discordant sounds.

His flesh is good food; but when skinned, his appearance is so like that of a young one of our own species, that a delicate stomach might possibly revolt at the idea of putting a knife and fork into it. However, I can affirm, from experience, that after a long and dreary march through these remote forests, the flesh of this Monkey is not to be sneezed at, when boiled in Cayenne pepper, or roasted on a stick over a good fire. A young one tastes not unlike kid, and the old ones have somewhat the flavour of he-goat.¹

¹ DARTON.

³ WATERTON.

* 'THE CAPUCHIN MONKEY (*Simia capucina*) is another species closely allied to the other, but is distinguished by the border of the face being paler instead of darker than the rest of the body, as is observable in the common brown Monkey. Its habits and haunts are the same.

Another species allied to this is the *Cebus olivaceus*, or Olive Monkey.

THE HORNED OR TUFTED SARAJOU (*Simia fatuellus*) belongs also to this tribe. It is of a blackish-brown colour with the borders of the face white, and derives its name from two tufts of hair which project above the eyebrows.

A large kind of Monkey with prehensile tail is often met with in the forests. It is of an entire black colour with long loose hair; the colour is paler over the ventral surface; its tail long and hairy. The face is more or less naked, with a red membrane encircling the eyes. It belongs to the tribe of Spider Monkeys, and is here known as the Beelzebub Monkey (*Ateles Beelzebub*).

Another species very much like the above is also common, and has been termed

THE QUATA, OR COATA (*Ateles paniscus*), but is distinguished by its flesh-coloured face. The whole surface of the body is black, no whitish appearance being visible about the belly. This is, perhaps, the most intelligent Monkey of this country, the natives having been long in the habit of training them to their service, and making them learn to fetch and carry like some dogs. They have a peculiar manlike appearance, and grow to the height of about three to four feet. They are seldom seen in large societies, and are indolent in their habits.

There are two or three other species of Spider Monkeys, or *Ateles*, common here. These, like the others, are readily known by the absence or mere trace of thumbs on the anterior legs or arms. One, Cajou, the *Ateles Ater*, has a black face as well as body, but in character and conduct they approach one another so closely as to render separate notices unnecessary. They inhabit the forests common to this country and Brazil; are gregarious, tractable, sportive, and fond of travelling about, and are said to use their tails to link themselves when desirous of throwing a bridge over either water or land.

The Monkeys whose tails are not prehensile have been termed Sakis. By BURTON they were named Sagonins, and by others have received the generic names *Callithrix* and *Pithecia*.

There are several varieties of Sakis met with here. They are easily recognised by their long bushy hair and tails; they are sometimes called Fox-tailed Monkeys; indeed, in size and general appearance they are not unlike that animal. Their faces and heads are small; the teeth and mouth project in a remarkable manner. They are of a morose and savage disposition, and are very noisy and quarrelsome in the woods.

THE BLACK SAKI (*Simia* vel *pithecia satanas*) is about three feet long, including the tail, and is of an entire black colour with long bushy

* Hair. The female is of a greyish hue, and sometimes brownish red. The breast and belly in both are scantily furnished with hair. This animal is also known as the Oxid.

THE WHITE-FACED SAKI, OF YARKEE (*Pithecia vel simia leucocephala*). The colour of the body is black, but the face has greyish-white hairs on the forehead, temples, and cheeks; some reddish grey hairs are seen over the eyebrows. The lower jaw, nose, mouth, chin, and a small space round the eyes are naked and membranous. The female is much lighter in colour, indeed it is of a greyish brown rather than black.

THE RED-BELLIED SAKI is another species common here, it is described as the (*Pithecia vel simia rufiventer*). The colour is brownish, but on the belly it is more or less red; the hair on the crown separates and falls forwards giving it a peculiar appearance. It is about the size of a cat, and has a very bushy tail; the ears are round and flat. Another species is known as

THE RED-EARED SAKI (*Pithecia vel simia rufibarba*),* from the fact of the beard about the face being of that colour. The colour of the upper part of the body is brownish black; of the under part light red.

There is another species of a brown and yellowish grey colour, which has a circle of ochreous yellow about the face, hence named yellow-headed Saki (*Pithecia vel simia ochrocephala*).

Another species, the (*Pithecia chiropotes*), is limited in its range, and is seldom found except about the river Rupununi where it may be seen in small societies.

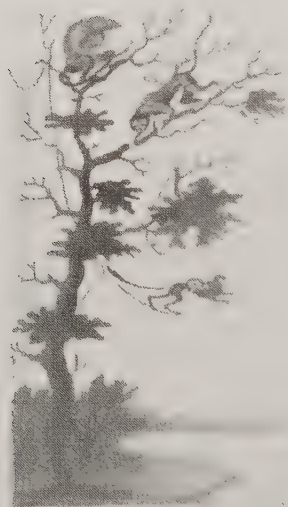
Of the small Squirrel-like Monkeys with tails not prehensile there are several varieties, some of which are common, and others rare. They have fewer teeth than the others. Of those which are somewhat rare, may be mentioned the Striated Monkey and the Pinche. The former, the Onistiti (*Simia vel hapale jacchus*), is of a greyish brown; the tail and part of the back are annulated brown and white; the head is reddish with a white spot on the forehead, and tufts of white hair about the ears.

THE PINCHE (*Simia vel nidus edipus*), is of a grey colour studded with brown, tail slender and reddish; on the head there are some long whitish hairs hanging behind the ears. This little animal is very rarely seen, but has occasionally been met with in the Guianas.

Both these Monkeys derive their name of Onistiti from the peculiar sound they make, which resembles that word when the syllables composing it are uttered.

The most common and interesting of the small Monkeys is that pretty little animal so well known here as

THE SAKAWINKI (*Callithrix vel simia sciurea*). The body is covered with close downy hair just like fur of a golden colour, the head and feet are orange, the tip of the nose black, tail long and tipped black. It has a small round head and hairy ears. From its size, its activity, and sportive



‘habits it has been termed the Squirrel Monkey, being not unlike that nimble little animal.

In the woods they may be seen in hundreds skipping from bough to bough, and I have often seen them make the most prodigious leaps, jumping over a wide road which had been cut through the forests in Essequibo, and on each side of which were lofty trees, their branches occasionally meeting overhead, and along which these Squirrel Monkeys dash fearlessly in a sort of “follow my leader” game, and bound off at times from tree to tree a distance of several yards across, when they may sometimes be knocked down with sticks or stones. They have a sharp twitter or cry, and are often made pets of by ladies and children, but it is only when caught young that they can thus be domesticated; the older animals do not readily bear confinement, and generally die of chagrin.

Perhaps the most elegant of the smaller Monkeys is that beautiful little animal known as

THE MAMMOSSET (*Midas rufimanus*), or red-handed Tamarin. It is of a splendid black colour, variegated in some places with grey; the hands or feet are orange red. They live in large societies in the interior, and their voices resemble in sound the cries of birds. They are seldom tamed.

THE MARAKINA, OR SILKY TAMARIN (*Midas rosalia*), is another species of this family. It is of a yellowish colour with reddish hues, and has a sort of mane upon the neck; the tail is long and bushy.

THE BLACK TAMARIN (*Midas ursulus*) is also, occasionally seen here, but is very uncommon; it is, as its name implies, of a black colour with reddish markings. A species of nocturnal Monkey,

THE DOUGOROU (*Aotes vel nyctipithecus trivirgatus*), has been met with by Humboldt and others in the neighbourhood of the river Cassiquari. It is of an ash or grey colour above, fawn colour below, with a black line on the forehead, and on each temple; length of body about nine inches. It sleeps all day, and prowls about at night, feeding on birds and insects. It is like a Cat in appearance, and is ferocious and not easily tamed.¹

THE CAYMAN, ALLIGATOR, OR CROCODILE of South America is an amphibious animal, and abounds in most of the rivers and canals of Guiana.² It is seldom more than from fifteen to twenty feet in length, usually of a light dusky colour when young, but becoming iron grey when full grown; it has a hard, scaly, impenetrable skin, indented on the back and upper ridge of the tail; the head very strongly formed, with a long snout and extremely wide jaws, armed with a formidable double row of sharp teeth. The claws on the fore feet are tremendously strong and sharp.³ The back of the Cayman may be said to be almost impenetrable to a musket ball; but his sides are not near so strong, and are easily pierced with an arrow; indeed, were they as strong as the back and the belly, there would be no part of the Cayman's body soft and elastic enough to admit of expansion after taking a large quantity of food.

³ 'The Cayman has no grinders; his teeth are entirely made for snatch and swallow; there are thirty-two in each jaw. Perhaps no animal in existence bears more decided marks in his countenance of cruelty and malice than the Cayman. He is the scourge and terror of all the large rivers in South America near the line.' ⁹ 'The flesh, although of a musky smell, is eaten with avidity by the Indians. The Indians, it is said, are very expert in catching the Cayman. A man dives down upon the Crocodile's back, while asleep, and fastens a rope round its body; he then strides across it, and, making a signal to his companions on the river's bank, they are pulled towards the surface of the water together.'

The following account of the capture of a Cayman is given by WATERTON in his *Wanderings in Guiana*. ³ 'The day was now declining apace, and the Indian had made his instrument to take the Cayman. It was very simple. There were four pieces of tough hard wood, a foot long, and about as thick as your little finger, and barbed at both ends; they were tied round the end of the rope, in such a manner, that if you conceive the rope to be an arrow, these four sticks would form the arrow's head; so that one end of the four united sticks answered to the point of the arrow-head, while the other end of the sticks expanded at equal distances round the rope. Now, it is evident, that if the Cayman swallowed this, (the other end of the rope, which was thirty yards long, being fastened to a tree), the more he pulled, the faster the barbs would stick into his stomach. This wooden hook, if you may so call it, was well-baited with the flesh of the Aconri, and the entrails were twisted round the rope for about a foot above it.

Nearly a mile from where we had our hammocks, the sand-bank was steep and abrupt, and the river very still and deep; there the Indian pricked a stick into the sand. It was two feet long, and on its extremity was fixed the machine; it hung suspended about a foot from the water, and the end of the rope was made fast to a stake driven well into the sand.

The Indian then took the empty shell of a land tortoise, and gave it some heavy blows with an axe. I asked why he did that. He said, it was to let the Cayman hear that something was going on. In fact, the Indian meant it as the Cayman's dinner-bell.

Having done this, we went back to the hammocks, not intending to visit it again till morning. During the night, the Jaguars roared and grumbled in the forest, as though the world was going wrong with them, and at intervals we could hear the distant Cayman. The roaring of the Jaguars was awful; but it was music to the dismal noise of these hideous and malicious reptiles.

About half-past five in the morning, the Indian stole off silently to take a look at the bait. On arriving at the place, he set up a tremendous shout. We all jumped out of our hammocks, and ran to him. The Indians got there before me, for they had no clothes to put on, and I lost two minutes in looking for my trousers and in slipping into them.

We found a Cayman, ten feet and a half long, fast to the end of the

‘rope. Nothing now remained to do, but to get him out of the water without injuring his scales, “*hoc opus, hic labor.*” We mustered strong; there were three Indians from the creek, there was my own Indian YAN, Daddy Qrasni, another man, and, lastly, myself.

I informed the Indians that it was my intention to draw him quietly out of the water, and then secure him. They looked and stared at each other, and said, I might do it myself; but they would have no hand in it; the Cayman would worry some of us. On saying this, “*cousedere duces.*” they squatted on their hams with the most perfect indifference.

The Indians of these wilds have never been subject to the least restraint; and I knew enough of them to be aware, that if I tried to force them against their will, they would take off, and leave me and my presents unheeded, and never return.

Daddy Qrasni was for applying to our gnus, as usual, considering them our best and safest friends. I immediately offered to knock him down for his cowardice, and he shrunk back, begging that I would be cautious, and not get myself worried; and apologising for his own want of resolution. My Indian was now in conversation with the others, and they asked if I would allow them to shoot a dozen arrows into him, and thus disable him. This would have ruined all. I had come above three hundred miles on purpose to get a Cayman uninjured, and not to carry back a mutilated specimen. I rejected their proposition with firmness, and darted a disdainful eye upon the Indians.

Daddy Qrasni was again beginning to remonstrate, and I chased him on the sand-bank for a quarter of a mile. He told me afterwards, he thought he should have dropped down dead with fright, for he was firmly persuaded, if I had caught him, I should have huddled him into the Cayman’s jaws. Here then we stood, in silence, like a calm before a thunder-storm. “*Hec res summa loco. Scinditur in contraria vulgus.*” They wanted to kill him, and I wanted to take him alive.

I now walked up and down the sand, revolving a dozen projects in my head. The canoe was at a considerable distance, and I ordered the people to bring it round to the place where we were. The mast was eight feet long, and not much thicker than my wrist. I took it out of the canoe, and wrapped the sail round the end of it. Now it appeared clear to me, that if I went down upon one knee, and held the mast in the same position as the soldier holds his bayonet when rushing to the charge, I could force it down the Cayman’s throat, should he come open-mouthed at me. When this was told to the Indians, they brightened up, and said they would help me to pull him out of the river.

“*Brave squad!*” said I to myself, “*‘Audax omnia perpeti,’* now that you have got me betwixt yourselves and danger.” I then mustered all hands for the last time before the battle. We were, four South American savages, two negroes from Africa, a Creole from Trinidad, and myself a white man from Yorkshire. In fact, a little tower of Babel group, in dress, no dress, address, and language.

⁵ 'Daddy Quasim hung in the rear; I showed him a large Spanish knife, which I always carried in the waistband of my trowsers: it spoke volumes to him, and he shrugged up his shoulders in absolute despair. The sun was just peeping over the high forests on the eastern hills, as if coming to look on, and bid us act with becoming fortitude. I placed all the people at the end of the rope, and ordered them to pull till the Cayman appeared on the surface of the water; and then, should he plunge, to slacken the rope and let him go again into the deep.

I now took the mast of the canoe in my hand (the sail being tied round the end of the mast) and sunk down upon one knee, about four yards from the water's edge, determining to thrust it down his throat, in case he gave me an opportunity. I certainly felt somewhat uncomfortable in this situation, and I thought of CERBERUS on the other side of the Styx ferry. The people pulled the Cayman to the surface; he plunged furiously as soon as he arrived in these upper regions, and immediately went below again on their slackening the rope. I saw enough not to fall in love at first sight. I now told them we would run all risks, and have him on land immediately. They pulled again, and out he came,—“monstrum, horrendum, informe.” This was an interesting moment. I kept my position firmly, with my eye fixed stedfast on him.

By the time the Cayman was within two yards of me, I saw he was in a state of fear and perturbation; I instantly dropped the mast, sprung up, and jumped on his back, turning half round as I vaulted, so that I gained my seat with my face in a right position. I immediately seized his fore legs, and, by main force, twisted them on his back; thus they served me for a bridle.

He now seemed to have recovered from his surprise, and probably fancying himself in hostile company, he began to plunge furiously, and lashed the sand with his long and powerful tail. I was out of reach of the strokes of it, by being near his head. He continued to plunge and strike, and made my seat very uncomfortable. It must have been a fine sight for an unoccupied spectator.

The people roared out in triumph, and were so vociferous, that it was some time before they heard me tell them to pull me and my beast of burden farther in land. I was apprehensive the rope might break, and then there would have been every chance of going down to the regions under water with the Cayman. That would have been more perilous than ARION'S marine morning ride:—

“*Delphini insidens vada cœrulea sulcat Arion.*”

The people now dragged us above forty yards on the sand: it was the first and last time I was ever on a Cayman's back.

After repeated attempts to regain his liberty, the Cayman gave in, and became tranquil through exhaustion. I now managed to tie up his jaws, and firmly secured his fore feet in the position I had held them. We had now another severe struggle for superiority, but he was soon overcome, and again remained quiet. While some of the people were pressing



W. W. R. de v. p. n. an. Essequibo, 1840.

² 'upon his head and shoulders, I threw myself on his tail, and by keeping it down to the sand, prevented him from kicking up another dust. He was finally conveyed to the canoe, and then to the place where we had suspended our hammocks. There I cut his throat; and after breakfast was over, commenced the dissection.'

IGUANA—GUANA.—⁹ 'The Guana is about three feet long from the head to the extremity of the tail, and covered with a soft skin; of a bluish green colour on the back and legs; on the sides and belly nearly white. It has a bag or pouch of loose skin under its throat of a light green, eyes black, and claws, of which there are three or five on each foot, sharply pointed. A fringed skin or kind of mane runs along from the head to the tail, which it erects when irritated, and will then snap hold of any thing with great tenacity, but it is perfectly harmless if undisturbed.' ¹³ 'Though not one of the aquatic Lizards, the Iguana is quite at home in the water, and if alarmed, will often plunge into the stream, and either dive or swim rapidly away. While swimming, it lays its fore legs against the sides, so as to afford the smallest possible resistance to the water, stretches out the hinder legs, and by a rapid serpentine movement of its long and flexible tail, passes swiftly through the water. It has considerable power of enduring immersion, as indeed is the case with nearly all reptiles, and has been known to remain under water for an entire hour, and at the end of that time to emerge in perfect vigour.

From the aspect of this long-tailed, dewlapped, scaly, spiny Lizard, most persons would rather recoil than feel attracted, and the idea of eating the flesh of so repulsive a creature would not be likely to occur to them. Yet in truth, the flesh of the Iguana is justly reckoned among one of the delicacies of the country where it resides, being tender, and of a peculiarly delicate flavour, not unlike the breast of a spring chicken. There are various modes of cooking the Iguana, roasting and boiling being the most common. Making it into a fricassee, however, is the mode which has met the largest general approval, and a dish of Iguana cutlets, when properly dressed, takes a very high place among the delicacies of a well-spread table.

The eggs too, of which the female Iguana lays from four to six dozen, are very well flavoured and in high repute. It is rather curious that they contain very little albumen, the yellow filling almost the entire shell. As is the case with the eggs of the Turtle, they never harden by boiling, and only assume a little thicker consistence. Some persons of peculiar constitutions cannot eat either the flesh or the eggs of the Iguana, and it is said that this diet is very injurious to some diseases. The eggs are hid by the female Iguana in sandy soil near rivers, lakes, or the sea-coast, and after covering them with sand, she leaves them to be hatched by the heat of the sun.

In consequence of the excellence of the flesh and eggs, the Guana is greatly persecuted by mankind, and its numbers considerably thinned. Those who hunt the animal for sport or merely to supply their own homes, generally employ a noose for the purpose, which they cast dexterously round

³ WATKINSON.

⁹ M. MARTIN.

¹³ WOOD'S NATURAL HIST. IV.

¹³ 'the neck of the reptile as it sits on a branch, and then by a sudden and sharp jerk loosen its hold, and secure it. The creature is very bold, having but little idea of running away, and in general is so confident of its capability of frightening away its antagonist by puffing up its long dewlap, and looking ferocious, that it is captured before it discovers its mistake. Even when caught, it has no notion of yielding without a struggle, but bites so fiercely with its sharp leaf-like teeth, and lashes so vigorously with its long whip-like tail, that it is not secured without some trouble and risk. It is also very tenacious of life, and does not readily die even from repeated blows with heavy sticks, so that the spear or the pistol are often employed to kill it.'

LIZARDS.—⁵ 'The SERPENTINE LIZARD is a very singular reptile, being neither Serpent nor Lizard, but partaking of the characters of both. The shape and contour of the body is exactly that of a Serpent, with four armatures or feet attached. The body is very slender, and nearly cylindric, covered with small annular bands, a little interrupted at the insertions of the feet, which are very imperfect, being small appendages, almost without toes or nails, except mere rudiments; it is, therefore, their situation alone that would imply them to answer that purpose. The eyes are small, teeth widely placed, and very fine, tongue bifid and cutaneous; back of chocolate colour, belly white. The limbs have each a joint about the middle, forming a sort of elbow, and there are three toes on each fore foot. When roused by any approaching danger, it displays much courage and agility, notwithstanding its helpless appearance, and springs aside at the assailant sometimes to the distance of two feet, never making the least attempt to escape. The hands under the belly are quite incapable of being elevated so as to facilitate motion, as in most other Serpents.

THE BANNED OR ANNULATED LIZARD, a harmless little creature, about five inches long, is one of the prettiest of the species; it has a flat and pointed head; body covered with black and light blue regular stripes, about a quarter of an inch wide; feet, each five small sharp claws; tail about an inch and a half long, pyramidal in form, and covered with fine bristles.

THE SALEMPENTA, or EL MATEO, measuring from the tail to the nose three feet, is exceedingly ugly; colour chiefly a brownish green, with yellow spots, and marked in the most extraordinary hieroglyphical manner; amphibious, running along the bottom of rivers as easily as it does on dry land, and feeding on herbs and small insects; it is thought (particularly by the Indians) good eating, the flesh being white and tender; resembles the Guana when seen at a distance, but much more repulsive in appearance than that animal. The Salempenta has (like the Chameleon, and several others of the same species) in some measure the faculty of changing its colour when in any way excited, either through fright or anger; but does not show its shades in such great variety as the Agamma, or common Green Lizard, which is about ten inches long, of which the tail measures half.

THE AGAMMA, OR AMERICAN CHAMELEON, is distinct from those of Africa in shape, by the back part of the head not running to a point, and

° its tongue being short and thick; body about six inches long; tail above nine; it is in shape like the Guana, to which genus it belongs; the principal change of colour observed in it is from green to brown, or *vice versa*, which, in the opinion of Baron VOX SACK (who had several of them domesticated) is assumed to deceive an enemy when approaching, and to render itself invisible; for example, if put on a green umbrella (says the Baron), it immediately changed to that colour, and upon being let down upon the floor, which was of a dark brown, it assumed a very dark chocolate colour. This change seems to be effected by the motion or disposition of its scales, as they are either elevated or depressed by its voluntary power; and when the reptile is fresh caught this will take place five or six times in a minute, all the time snapping at any thing that approaches it. The bite, if not attended to, will inflame and become painful, but is not at all dangerous. The power of changing colour is not confined solely to the Chameleon, but is common to several of the Lizard tribe.

THE WOODSLAVE, is a small species of Gecko. ° It has no claws on its toes, the pupil of the eye is round, and the eyelid circular. The back and tail are covered with small scales. The colour is generally black and yellow, arranged in cross bands, and there is a white streak on each side of the head. There are several species belonging to this genus, all inhabiting similar localities. It is generally supposed to possess a store of venomous saliva, causing the part of the body on which it falls to swell grievously, and to eject this poisonous substance from some distance upon those who chance to vex its irascible temper. The specific term *spatator* signifies a spitter, and has been given to the reptile on account of this supposed propensity. The poisonous saliva is said to be black.

THE RATTLESNAKE.—¹⁵ 'This dreadful reptile is remarkable for the singular termination to the tail, from which it derives its popular name. At the extremity of the tail are a number of curious loose horny structures, formed of the same substance as the scales, and varying greatly in number according to the size of the individual. It is now generally considered that the number of joints on the "rattle" is an indication of the reptile's age, a fresh joint being gained each year immediately after it changes its skin.

The joints of this remarkable apparatus are arranged in a very curious manner, each being of a somewhat pyramidal shape, but rounded at the edges, and being slipped within its predecessor as far as a protuberant ring which runs round the edge. In fact, a very good idea of the structure of the rattle may be formed by slipping a number of thimbles loosely into each other. The last joint is smaller than the rest, and rounded. As already mentioned, the number of these joints is variable, but the average number is from five or six to fourteen or fifteen. There are occasional specimens found that possess more than twenty joints in the rattle, but such examples are very rare.

When in repose, the Rattlesnake usually lies coiled in some suitable spot, with its head lying flat, and the tip of its tail elevated in the middle of the coil. Should it be irritated by a passenger, or feel annoyed or

¹⁵ 'alarmed, it instantly communicates a quivering movement to the tail, which causes the joints of the rattle to shake against each other, with a peculiar skirring ruffle, not easily described but never to be forgotten when once heard. All animals even those which have never seen a Rattlesnake, tremble at this sound, and try to get out of the way.

The Rattlesnake is slow and torpid in its movements, and seldom attempts to bite unless it is provoked, even suffering itself to be handled without avenging itself. Mr. WATERTON tells me in connexion with these reptiles: "I never feared the bite of a Snake, relying entirely on my own movements. Thus, in presence of several professional gentlemen, I once transferred twenty-seven Rattlesnakes from one apartment to another, with my hand alone. They hissed and rattled when I meddled with them, but they did not offer to bite me." The fer-de-lance Snake is, as has already been mentioned, most fierce and irritable in character, taking the initiative, and attacking without reason. But the Rattlesnake always gives notice of its deadly intentions, and never strikes without going through the usual preliminaries. When about to inflict the fatal blow, the reptile seems to swell with anger, its throat dilating, and its whole body rising and sinking as if inflated by bellows. The tail is agitated with increasing vehemence, the rattle sounds its threatening war-note with sharper ruffle, the head becomes flattened as it is drawn back ready for the stroke, and the whole creature seems a very incarnation of deadly rage. Yet, even in such moments, if the intruder withdraw, the reptile will gradually lay aside its angry aspect, the coils settle down in their place, the flashing eyes lose their lustre, the rattle becomes stationary, and the Serpent sinks back into its previous state of lethargy.

The food of the Rattlesnake consists of rats, mice, reptiles, and small birds, the latter of which creatures, it is said to obtain by the exercise of a mysterious power termed fascination, the victim being held, as it were, by the gaze of its destroyer, and compelled to remain in the same spot until the Serpent can approach sufficiently near to seize it. It is even said that the Rattlesnake can coil itself at the foot of a tree, and by the mere power of its gaze force a squirrel or bird to descend and fling itself into the open mouth waiting to receive it.

THE KUNUKUSI—COURRACOUCHI—BUSH MASTER.—¹⁶ 'Another very formidable species is the Kunukusi or Courraouchi of the Indians (*Crotalus molus*), which is of a yellow colour, with black or brown spots on the back. It is from eight to twelve feet long, and found in the forests, where it is termed bushmaster by the colonists. It is very much dreaded by travellers, and those who have to traverse woods, for it has no rattle by which to warn its approach.

THE LABARRI snake is of a light brown colour, variegated with chestnut-coloured streaks on the back and sides. The mouth is large, and armed with two sharp fangs in the upper jaw. It is met with in all parts of the country, and is much dreaded even by the native Indians, whose sharp eyes will often detect this serpent when unnoticed by others.

Another species of this viper has been described by some as formerly

'known as the yellow-tailed Labarri. It is smaller than the other, and used to be found in the cane pieces, but seldom seen at the present day. Dr. Bancroft, in his account of Guiana, mentions an instance where the bite proved fatal in five minutes.'

³ 'WATERTON in describing the snakes of the Colony,' says that there is not much danger in roving amongst snakes and other beasts, provided only that you have self-command. You must never approach them abruptly; if so, you are sure to pay for your rashness; because the idea of self-defence is predominant in every animal, and thus the snake, to defend himself from what he considers an attack upon him, makes the intruder feel the deadly effect of his poisonous fangs. The Jaguar flies at you, and knocks you senseless with a stroke of his paw; whereas, if you had not come upon him too suddenly, it is ten to one but that he had retired, in lieu of disputing the path with you. The Labarri snake is very poisonous, and I have often approached within two yards of him without fear. I took care to move very softly and gently without moving my arms, and he always allowed me to have a fine view of him, without showing the least inclination to make a spring at me. He would appear to keep his eye fixed on me, as though suspicious, but that was all. Sometimes I have taken a stick ten feet long, and placed it on the Labarri's back. He would then glide away without offering resistance. But when I put the end of the stick abruptly on his head, he immediately opened his mouth, flew at it, and bit it.

One day, wishing to see how the poison comes out of the fang of the snake, I caught a Labarri alive. He was about eight feet long. I held him by the neck, and my hand was so near his jaw, that he had not room to move his head to bite it. This was the only position I could have held him with safety and effect. To do so, it only required a little resolution and coolness. I then took a small piece of stick in the other hand, and pressed it against the fang, which is invariably in the upper jaw. Towards the point of the fang, there is a little oblong aperture on the convex side of it. Through this, there is a communication down the fang to the root, at which lies a little bag containing the poison. Now, when the point of the fang is pressed, the root of the fang also presses against the bag, and sends up a portion of the poison therein contained. Thus, when I applied a piece of stick to the point of the fang, there came out of the hole a liquor thick and yellow, like strong camomile tea. This was the poison, which is so dreadful in its effects, as to render the Labarri snake one of the most poisonous in the forests of Guiana. I once caught a fine Labarri, and made it bite itself. I forced the poisonous fang into its belly. In a few minutes I thought it was going to die, for it appeared dull and heavy. However, in half an hour's time, he was as brisk and vigorous as ever, and in the course of the day showed no symptoms of being affected. Is then the life of the snake proof against its own poison? This subject is not unworthy of the consideration of the naturalist?

THE CAMOUDI or BOX CONSTRICTOR.—There are two species found in the colony. The water and the land Camoudi; the latter is the shorter and thicker of the two. ⁴ The tail of the land Camoudi is thick, tapering and prettily

marked purple, brown, and white. The colour of the body is reddish-brown, with large oval patches of a dirty-white colour on its sides, with irregular streaks of the same colour in various directions. It has just the appearance of an oil-cloth elaborately ornamented; such, at least, was the appearance of a bea which I examined lately. The larger kind is generally of a darker colour. Both species are capable of biting, and that severely; but it is by encircling their victims in their deadly folds and crushing them to death that the greatest danger lies.⁹

An encounter with one of these snakes is thus given by Captain STEDMAN, during his travels in Surinam, and may be appropriately introduced here.

¹² 'As I was resting in my hammock, the sentinel called to me that he had seen and challenged something black and moving in the brushwood on the beach, which gave no answer; but which, from its size, he concluded must be a man. I immediately dropped anchor; and having manned the canoe, ill as I was, I stepped into it, and rowed up to the place mentioned by the sentinel. Here we all stepped ashore to reconnoitre, as I suspected it to be no other than a rebel spy, or a straggling party detached by the enemy; but one of my slaves, of the name of David, declared it was no negro, but a large amphibious snake, which could not be far from the beach, and I might have an opportunity of shooting it if I pleased. To this, however, I had not the least inclination, from the uncommon size of the creature, from my weakness, and the difficulty of getting through the thicket, which seemed impenetrable to the water's edge; and therefore, ordered all of them to return on board. The negro then asked me the liberty to step forward and shoot it himself, assuring me it could not be at any great distance, and warranting me against all danger. This declaration inspired me with so much pride and emulation, that I determined to take his first advice, and kill it myself: provided he would point it out to me, and be responsible for the hazard, by standing at my side, from which I swore that if he dared to move, I should level the piece at himself and blow out his own brains.

To this the negro cheerfully agreed; and having loaded my gun with a ball-cartridge, we proceeded; David cutting a path with a bill-hook, and a marine following, with three more loaded firelocks to keep in readiness. We had not gone above twenty yards through mud and water, the negro looking every way with an uncommon degree of vivacity and attention; when starting behind he called out, "Me see snake!" and in effect there lay the animal, rolled up under the fallen leaves and rubbish of the trees: and so well covered, that it was some time before I distinctly perceived the head of this monster, distant from me not above sixteen feet, moving its forked tongue, while its eyes, from their uncommon brightness, appeared to emit sparks of fire. I now, resting my piece upon a branch, for the purpose of taking a surer aim, fired; but missing the head, the ball went through the body, when the animal struck round, and with such astonishing force as to cut away all the underwood around him with the facility of a scythe mowing grass; and by flouncing his tail, caused the mud and dirt to fly over our heads to a considerable distance. Of this proceeding however we were not torpid spectators, but took to our heels, and crowded into the



canoe. The negro now intreated me to renew the charge, assuring me the snake would be quiet in a few minutes, and at any rate persisting in the assertion that he was neither able nor inclined to pursue us; which opinion he supported by walking before me, till I should be ready to fire. And thus I again undertook to make the trial, especially as he said that his first starting backwards had only proceeded from a desire to make room for me. I now found the snake a little removed from his former station, but very quiet, with his head as before, lying out among the fallen leaves, rotten bark, and old moss. I fired at it immediately, but with no better success than the other time; and now, being but slightly wounded, he sent up such a cloud of dust and dirt, as I never saw but in a whirlwind, and made us once more suddenly retreat to our canoe; where now, being heartily tired of the exploit, I gave orders to row towards the lagoon; but David still intreating me to permit *him* to kill the animal, I was, by his persuasions, induced to make a third and last attempt, in company with him. Thus, having once more discovered the snake, we discharged both our pieces at once, and with this good effect, that he was now by one of us shot through the head. David, who was made completely happy by this successful conclusion, ran leaping with joy, and lost no time in bringing the boat-rope, in order to drag him down to the canoe; but this again proved not a very easy undertaking, since the creature, notwithstanding its being mortally wounded, still continued to writhe and twist about, in such a manner as rendered it dangerous for any person to approach him. The negro, however, having made a running noose on the rope, and after some fruitless attempts to make an approach, threw it over his head with much dexterity; and now, all taking hold of the rope, we dragged him to the beach, and tied him to the stern of the canoe, to take him in tow. Being still alive, he kept swimming like an eel; and I having no relish for such a shipmate on board, whose length (notwithstanding to my astonishment all the negroes declared it to be but a young one come to about its half growth) I found upon measuring it to be twenty-two feet and some inches, and its thickness about that of my black boy Quacco, who might then be about twelve years old, and round whose waist I since measured the creature's skin.

Being arrived alongside of the *Charon*, the next consideration was, how to dispose of this innocuous animal; when it was at length determined to bring him on shore at Barbacocha, to have him skinned and take out the oil, &c. In order to effect this purpose, the negro David having climbed up a tree with the end of the rope, let it down over a strong forked bough, and the other negroes hoisted up the snake, and suspended him from the tree. This done, David, with a sharp knife between his teeth, now left the tree, and clung fast upon the monster, which was still twisting, and began his operations by ripping it up, and stripping down the skin as he descended. Though I perceived that the animal was no longer able to do him any injury, I confess I could not without emotion see a man stark naked, black and bloody, clinging with arms and legs round the slimy and yet living monster. This labour, however, was not without its use, since he not only dexterously finished the operation, but provided me, besides the

12 skin, with above four gallons of fine clarified fat, or rather oil, though there was wasted perhaps as much more. This I delivered to the surgeons for the use of the wounded men in the hospital, for which I received their hearty thanks, it being considered, particularly for bruisés, a very excellent remedy. When I signified my surprise to see the snake still living, after he was deprived of his intestines and skin, Caramaca, the old negro, whether from experience or tradition, assured me he would not die till after sun-set. The negroes now cut him in slices, in order to dress and feast upon him, they all declaring that he was exceedingly good and wholesome; but to their great mortification I refused to give my concurrence.

The Camoudi when full grown is sometimes forty feet in length, and more than four feet in circumference: its colour is a fine greenish black on the back; a brownish yellow on the sides, and a dirty white under the belly; the back and sides being spotted with irregular black rings, with a pure white in the middle. Its head is broad and flat, small in proportion to the body, with a large mouth, and a double row of teeth: it has two bright prominent eyes; is covered all over with scales, some about the size of a shilling; and under the body, near the tail, armed with two strong claws like cockspurs, to help it in seizing its prey. It is an amphibious animal, that is, it delights in low and marshy places, where it lies coiled up like a rope, and concealed under moss, rotten timber, and dried leaves, to seize its prey by surprise, which from its immense bulk it is not active enough to pursue. When hungry, it will devour any animal that comes within its reach, and is indifferent whether it is a sloth, a wild boar, a stag, or even a tiger; round which having twisted itself by the help of its spinous formation. So that the creature cannot escape, it breaks, by its irresistible force, every bone in the animal's body, which it then covers over with a kind of slime or slaver from its mouth, to make it slide; and at last gradually sucks it in, till it disappears: after this, the animal cannot shift its situation, on account of the great knob or knot which the swallowed prey occasions in that part of the body where it rests till it is digested; for till then it would hinder the snake from sliding along the ground. During that time the Camoudi wants no other subsistence. I have been told of negroes being devoured by this animal, and am disposed to credit the account; for should they chance to come within its reach when hungry, it would as certainly seize them as any other animal. I do not apprehend that its flesh, which is very white, and looks like that of fish, is in any respect pernicious to the stomach. I should have had no objection to the negroes eating it till it was consumed, had I not observed a kind of dissatisfaction among the remaining marines, who would not have been pleased with my giving the negroes the use of the kettle to boil it. The bite of this snake is said not to be venomous; nor do I believe it bites at all from any other impulse than hunger.'

THE PARROT SNAKE.—*Bothrops bilineatus* is also a very dangerous snake. It is found among woods and grass, and its greenish colour renders it difficult of detection. They attain the size of two to three feet.

THE GUANA SNAKE is so called from its having a pouch under the throat. It is of a yellow colour, with black lozenge-shaped spots on the body and is a very venomous species.

Non-Venomous Snakes.—Belonging to the non-venomous snakes are those long, slender-bodied serpents, which are here known as whip snakes, their appearance being like the thong of a whip. They are arboreal in their habits, living among branches of trees, where they glide about rapidly and securely, occasionally lashing themselves out to secure their prey, insects chiefly. They range in length from three to four feet, and are harmless and timid.

The following varieties are known:*

<i>Dendrophis hoereva</i>	
<i>Dryophis catenylis</i> , 3 to 4 feet long	
<i>Hipsas mikanti</i> "	
" <i>weigeltii</i> "	

" <i>punctatus</i> (non-venomous)

Among water-snakes and non-venomous are several harmless plain-coloured species, which frequently are found in the trenches and streams.

A species of *Water-snake* (*Homalopsis angulata*—Richard Schomburgk) has been met with by that writer in Savannah streams. It had a length from three to four feet.

Of the other innocuous or non-venomous snakes the following merit notice, and may be classed into terrestrial, arboreals, and water:

1st. The *Coral snakes* are so called from their striped appearance, the colours being generally red, black and white. They are met with in the neighbourhood of plantations and the towns, and vary in size as well as colour. Generally they are found from four to eight feet in length: they are pretty-looking reptiles, and are very abundant. The following species have been enumerated by authors:*

<i>Coluber corais</i>
" <i>pantherinus</i>
" <i>variabilis</i>

<i>Coluber plumbeus</i> ?
" <i>pectinatus</i>
" <i>macrolepidotus</i>

Allied with these in character and appearance, and even classified under the generic term of *Colubers* by Cuvier, are the following species:—

<i>Herpetodryas carinatus</i>	<i>Herpetodryas lineatus</i>	<i>Herpetodryas viridissimus</i>
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The other terrestrial non-venomous snakes are:

<i>Coronella micramii</i> , 1 to 2 feet long
" <i>regina</i> , 2 to 3 do.
" <i>cobella</i>
<i>Xenodon severus</i> "

<i>Heterodon guianensis</i> , 2 to 3 feet long
<i>Lycodon chelon</i> , 3 to 4 do.
<i>Chilmananda melanolepis</i>

They are by no means common, and are chiefly found in the interior of the country, far away from the cultivated districts.

TORTOISES AND TURTLES are commonly met with, but are chiefly to be seen in the wooded heights, banks of streams, and sandy districts. They vary exceedingly in size. The larger kind of turtle weigh occasionally

* 'from 50 to 100lbs.; while some of another species are so small as to be made pets of, and are kept in small basins in the drawing-rooms.

The large green turtle, *Chelonia midas*, are not unfrequently caught by fishermen on the sand banks about the coast, both in Demerara and Essequibo; in the latter district an allied species is frequently found. The females seek the land to deposit their eggs in the sand; they excavate large holes, and lay a certain number in one place at a time, and return again next day to repeat the operation. In this way, several hundred eggs are deposited in sand nests close to the water, in fact just beyond the influence of the tide. When hatched, the careful mother, who has visited them, leads the young turtles down to the water, where they soon make acquaintance with their future element. The eggs have a soft shell, are round, and are very good to eat.'

There are two species of land turtle found in Guiana, the first of which 'the common turtle, eighteen or twenty inches in length, has an upper shell of an oval form, hexangular in shape, highly convex and elevated, of a yellowish brown colour, and very hard texture; the under shell slightly concave, and of a lighter colour. The head, feet, and tail resemble those of an European tortoise, which it is also like in its motions. They feed on fruits and vegetables, and are tolerable eating, but not equal to sea turtle.

The other species, called by the Indians Arracaca, is of a smaller size, its upper shell flat, of a dark dingy colour, and seems capable of a fine polish; body of the animal black, with light red spots; tastes very indifferent.'

CRABS.—† 'The mud flats on the coasts and on the banks of the rivers abound with innumerable crabs, which at low water may be seen in thousands issuing from or retreating to their holes. By boring cavities on the embankments of estates they frequently occasion much mischief by undermining the earth and allowing the water to ooze through. Some species inhabit the fresh waters; and both Crabs and prawns are constantly to be found in the canals and trenches of many estates. It is curious to observe their habits in the numerous mud flats throughout the colony.

The largest species of crab is the Bouoori, which is found along the coasts and rivers. It is a species of *Gecarcinus*. It is of a bluish colour above and brown underneath, and is much esteemed for the table.

But the crab which is most commonly caught and sold for eating is the *Cancer uca* *una*, which is found in mud flats all over the colony. It is of a reddish colour, and the legs are hairy; at certain seasons of the year they are not considered good to eat.

A very common kind of crab is to be found in thousands along the mud flats about Georgetown. They are named the calling crabs (*Cancer rel gelasius vocans*), from the peculiar habit they have of waving the large claw, as if making an appellative gesture; they vary much in size, and the older ones are remarkable for having one of the claws much larger than the other; sometimes it is the right, at other times the left claw which outgrows the other in size, and which is used for excavating holes in which to burrow. At low water these crabs may be seen in great numbers on the mud flats of the river, with their large claw erect, or slowly waved, like

⁴ 'the human hand; at times they make a loud, clacking noise with these claws; these crabs are not eaten except by the coolies and are called by the creoles Madeira crabs.

A species of the crab allied to the above is the boatman crab (*Gelasius marionis*). In this crab one claw is generally much larger than the other; the legs are of a reddish colour, and the body of a rhomboid form, and dark in hue. It is found in mud flats, and if brayed in a mortar and stewed, is good to eat.

The smallest kind of crab here is the Pinnoteres, which in thousands may be seen crawling along mud flats, about bridges and stellings, and in graveyards and swampy places. They vary in size from one half to one inch in length.

A remarkable species of crab is called Jumbi or Soldier Crab (*Grapsus eximatus*). It is met with about the stellings and bridges, and also in trenches. It is of yellow colour underneath; but the back and legs are of a bright red colour, mottled black, yellow, and green; its legs are hairy. These crabs are very shy, and conceal themselves under stones and other substances, and always walk sideways. They have been known to climb trees, and are very active; they are not eaten—indeed, the flesh is considered poisonous, hence the name jumbi crab.

The natives call one species the buck crab. It is very like the bonoori, and is, perhaps, a species of *grecarius*. It has a bluish black, and the legs are of a whitish hue, tinged with violet.

Another kind is named the swamp crab; it is of an orange colour, with reddish legs, and is found in swamps about the Essequibo. Of the water crabs, or those which swim well, and have flat fins to their legs, the most interesting is that called here the sherigo crab (*Portunus vel Thelapsia*). It is caught in the trenches and canals, and pinches severely with its claws; it is a great scavenger, and feeds on almost everything. The colour varies; they are yellow, reddish, and of a greenish hue, sometimes almost white. The back is glabrous, and curiously marked with deeply impressed lines, which have a singular resemblance to the bust and body of a female, so much so that native artists, by the addition of a head and feet, touched up with a little paint, complete in a few moments a capital female figure on the top of the shell.

The prawn and shrimp are both found here in the rivers as far as the salt water extends.

The prawn (*Palaemon serratus*) attains to the size of four or five inches, and is of a pale steel blue colour, with greenish-coloured tail and legs. The shrimp (*Crangon vulgaris*) and another species of prawn are likewise found, and are much esteemed for the table.

FROGS AND TOADS.—¹⁰ 'The number and variety of Frogs which swarm in the ditches and canals around Georgetown are scarcely to be credited, and the croaking they make during the night, and even in the daytime, is unceasing. There is a species called the *Whistler*, which has a sharp distinct yelp, or whoop; but the usual noise is a continuous sound of hoarse or bass notes, that occasionally has something of a musical cadence, rising at times into a loud

¹⁰ 'and somewhat mournfull swell, that gradually sinks, and "in hollow murmurs dies away." One particular frog evidently leads the choir in every pond, while his companions join the chorus. The strain is taken up by a thousand separate communities, and is prolonged throughout the whole night.'

¹ 'Of the larger kinds of frogs or toads, there are several varieties. The most common is a species of a yellowish-brown colour, which is always to be seen hopping about the streets and houses in wet weather. They take to the water in spawning time.

Two other allied species are mentioned by Richard Schomburgk, found among leaves in humid places in the neighbourhood of the river Pomeroon; also found in damp wooded places in the interior.

THE TREE FROGS are very numerous, and offer several varieties. They are in general of small size, and of pretty colours. They are easily recognised by the sponge-like pellets on the extremities of the toes, by means of which they are enabled to adhere to walls, trees, and houses. It is a common thing to find them inside the water goglets, and when disturbed, they take prodigious leaps, and fasten themselves against the ceiling, panes of glass, and mirrors, where they will remain a long time puffing their throats. Most of them have a kind of pouch under the throat, which is capable of considerable dilatation, especially when crying. They feed on insects, and spawn in water.

Also *Dendrobates tinctorius*, a species of frog found in the stony banks of streams about the Roraima mountains.

Of the family of *Pipa* there is a large kind common to the town and country, and often seen in dark damp places about the houses. It is the *Pipa americana*. It is easily known by the tuberculated appearance of the skin of the back. These are, in fact, a description of cells, in which the eggs of the female are placed to be hatched.' This remarkable toad is generally known as—

THE SURINAM TOAD, has long attracted attention, not for its beauty, ¹⁵ 'as it is one of the most unprepossessing of beings, but for the extraordinary way in which the development of the young is conducted.

When the eggs are laid, the male takes them in his broad paws, and contrives to place them on the back of his mate, where they adhere by means of a certain glutinous secretion, and by degrees become embedded in a series of curious cells formed for them in the skin. When the process is completed, the cells are closed by a kind of membrane, and the back of the female toad bears a strong resemblance to a piece of dark honey-comb, when the cells are filled and closed. Here the eggs are hatched, and in these strange receptacles the young pass through their first stages of life, not emerging until they have attained their limbs, and can move about on the ground.

When the young have attained their perfect state, they break their way through the cover of the cells, and present a most singular aspect as they struggle from the skin, their heads and paws projecting in all directions. In the museum of the College of Surgeons may be seen some very

¹⁵ 'good specimens of the Surinam Toad, some being entire, and others dissected, so as to show the cells and their structure. After the whole brood have left their mother's back, the cells begin to fill up again, closing from below as well as from above, and becoming irregularly pockered on the floor. The cells in the middle of the back are the first developed; the whole process occupies rather more than eighty days.

The colour of the Surinam Toad is brownish olive above, and whitish below. The skin is covered with a large number of tiny and very hard granules, among which are interspersed some horny tubercular projections. The snout is of a very curious shape, the nostrils being lengthened into a kind of leathery tube. The throat of the toad is furnished with a very large bony apparatus, of a triangular box-like shape, and within are two movable pieces by which the voice is modulated.'

VAMPIRE BAT.—There are four or five different kinds of bats in Guinea. Bats are considered by naturalists 'as a sort of link or chain between the monkey tribe and other animals, and in this country several interesting species are found. Bats are generally considered as nocturnal creatures, but although they come out only at night, and are asleep during the day, they are nevertheless, far from idle during the day. They are frequently flying about inside of houses, especially in gloomy places, during the daytime. They fly along so noiselessly that their movements could not be heard, and were evidently in quest of food for their young ones, who were perched in rows with their heads hanging downwards, and supporting themselves with their feet hooked in between the boarding of the roof. They are not always afraid of the human presence, for several persons were living in the rooms covered in by the roof which these bats inhabited; whether the gloominess of the apartment made them believe that the sun had gone down, I do not know, but certain it is that they fly both night and day, and may frequently be heard as well as seen twittering during daylight. They are great torments to householders and others; they are very apt to enter the eaves or roofs of which are not infested by bats, whose dung, consisting of little black pellets, accumulates to such an extent as to form large heaps.

The larger kinds inhabit the forests, where they may be seen suspended in clusters on the branches.'

² 'The *Vampire Bat*, which often measures thirty inches from point to point of wing when extended, although the body seldom exceeds seven or eight; it resembles the harpies of old in its hideous and disgusting appearance. The vampires may be seen in the forests, hanging by their heads downwards in clusters on the branches of trees; the large kind suck, it is said, the blood of men and animals when sleeping, the smaller that of birds; while sucking, a gentle papping is heard by the wing, which hails the sufferer until an exhaustion is reached, marking the period when the vampire may suck with impunity. While sleeping in an open hut, the vampires are only kept off by means of large fires.'

The following description of the Vampire is given by WATERTON in his *Wanderings*:—³ 'We will now take a view of the Vampire. As there was a free entrance made to the Vampire in the loft where I slept, I had

“many a fine opportunity of paying attention to this nocturnal surgeon. He does not always live on blood. When the moon shone bright, and the fruit of the banana-tree was ripe, I could see him approach and eat it. He would also bring into the loft, from the forest, a green round fruit, something like the wild Guava, and about the size of a nutmeg. There was something also, in the blossom of the Sawarri nut-tree, which was grateful to him; for on coming up Waratilla creek, in a moonlight night, I saw several vampires fluttering round the top of the Sawarri tree, and every now and then the blossoms, which they had broken off, fell into the water. They certainly did not drop off naturally, for on examining several of them, they appeared quite fresh and blooming. So I concluded the vampires pulled them from the tree, either to get at the incipient fruit, or to catch the insects which often take up their abode in flowers.

The vampire, in general, measures about twenty-six inches from wing to wing extended, though I once killed one which measured thirty-two inches. He frequents old abandoned houses and hollow trees; and sometimes a cluster of them may be seen in the forest hanging head downwards from the branch of a tree.

Goldsmith seems to have been aware that the vampire hangs in clusters, for in the “Deserted Village,” speaking of America, he says,—

“And matted woods, where birds forget to sing,
The silent bats in drowsy clusters cling.”

The vampire has a curious membrane, which rises from the nose, and gives it a very singular appearance. It has been remarked before, that there are two species of vampire in Guiana, a larger and a smaller. The larger sucks men and other animals; the smaller seems to confine himself chiefly to birds. I learnt from a gentleman, high up in the river Demerara, that he was completely unsuccessful with his fowls, on account of the small vampire. He showed me some that had been sucked the night before, and they were scarcely able to walk.

Some years ago I went to the river Pomeroon with a Scotch gentleman. We hung our hammocks in the thatched loft of a planter's house. Next morning I heard this gentleman muttering in his hammock, and now and then letting fall an imprecation or two, just about the time he ought to have been saying his morning prayers. “What is the matter, Sir,” said I softly; “is any thing amiss?” “What's the matter?” answered he, snrily; “why, the vampires have been sucking me to death.” As soon as there was light enough, I went to his hammock, and saw it much stained with blood. “There,” said he, thrusting his foot out of the hammock, “see how these infernal imps have been drawing my life's blood.” On examining his foot, I found the vampire had tapped his great toe: there was a wound somewhat less than that made by a leech: the blood was still oozing from it; I conjectured he might have lost from ten to twelve ounces of blood. Whilst examining it, I think I put him into a worse humour by remarking, that an European surgeon would not have been so generous as to have blooded him without making a charge. He looked up in my face, but did not say a word: I saw he was of opinion that I had better have spared this piece of ill-timed levity.

Insects.—THE KNIFE OR RAZOR-GRINDER—RHINOCEROS BEETLE, ² 'resembles an European beetle in shape and colour, but is of a much larger size with a long, stout horn projecting from the end of the nose, and a smaller one beneath. With these horns the knife-grinder seizes on a young branch of a tree; then, setting its body in a rapid circular motion, an attrition is kept up for some time, until the wood is completely sawn through: the insect making, all the while, a deafening noise, exactly like that of a knife-grinder holding steel against the stone of his wheel. When the branch drops off, they strip it of the bark, upon which they subsist while it lasts; when a fresh supply is required, they again commence the usual operation.

THE LANTERN-FLY is nearly three inches long, the body of a beautiful green, in shape something like the common moth, with four transparent wings, of a delicate light green, and on each of the under wings a spot brilliantly variegated with purple and yellow, not unlike the feathers in the peacock's tail; from the head rises a large proboscis, of an oval form, but tapering most towards the head, which is called the lantern, as it emits a bright light, said by some to be so powerful that, on putting one of them under a glass, a common print may be read by them. 'There are two other species of fire-flies, having a luminous spot under each wing, (so that the light can only be observed while they are flying), which in the rainy season assemble in great numbers, appearing sometimes like so many intermitting sparks from fireworks.'

THE FIRE-FLY—³ 'The true fireflies, or elateridæ, are of several kinds. From their peculiar construction they are excellent leapers, bending their bodies in half, and with a loud, clicking noise spring up to a considerable height. They are seen on rather dark nights lurking among grass or shrubs, and are remarkable for the bright luminous spots which shine forth like the glowworms' light, and of such intensity as to enable a person to read by it. They feed upon flowers and tender leaves, and the larvæ, or grubs (wire-worms), live upon wood and roots, proving occasionally very destructive to sugar-canes and other plants.

The lampyridæ, or small fireflies, are the most common, and at night are sometimes seen in thousands dancing in the air, presenting a most beautiful sight. The light seems emitted by small spots under the abdomen and wings, and, unless in motion, they rarely shine. These small fireflies are about half an inch in length, and are of a yellow colour, spotted with black. They feed upon caterpillars, snails, but not, I believe, upon plants. They are seldom seen during the day. They are the glowworms of this country, and have been used by some creole nations to ornament the dark ringlets of the women, for which purpose they are enclosed in folds of gauze, which are worn on the head. The effect when moving in obscure chambers must be very striking.'

THE MOSQUITOES ¹⁰ are very troublesome and annoying especially when they first swarm; and it is only by the smoke of grass, or even wood, that a room can be made habitable. The ova of this insect are deposited on the leaves of aquatic plants, or on the surface of stagnant water. The young fry live for some time in the water, when it is scarcely possible to drink a mouthful without swallowing a dozen. They are like the jumpers in decayed cheese, as they move in the water by jerks, and not regular swimming. The time that they remain in this state I could not ascertain; but when it is accomplished, they rise from the pools in myriads, as winged insects, and are then most blood-thirsty.¹¹

THE BÊTE ROUGE.—¹² 'In Guiana there is a little insect in the grass and on the shrubs, which the French call Bête-rouge. It is of a beautiful scarlet colour, and so minute, that you must bring your eye close to it before you can perceive it. It is most numerous in the rainy season. Its bite causes an intolerable itching. The best way to get rid of it, is to rub the part affected with oil or rum. You must be careful not to scratch it. If you do so, and break the skin, you expose yourself to a sore. The first year I was in Guiana, the Bête-rouge, and my own want of knowledge, and I may add, the little attention I paid to it, created an ulcer above the ankle, which annoyed me for six months, and if I hobbled out into the grass, a number of Bête-rouge would settle on the edges of the sore, and increase the inflammation. Still more inconvenient, painful, and annoying is another little pest, called—

THE CHEGOE.—¹³ 'It looks exactly like a very small flea, and a stranger would take it for one. However, in about four and twenty hours, he would have several broad hints that he had made a mistake in his ideas of the animal. It attacks different parts of the body, but chiefly the feet, betwixt the toe nails and the flesh. There it buries itself, and at first causes an itching not unpleasant. In a day or so, after examining the part, you perceive a place about the size of a pea, somewhat discoloured, rather of a blue appearance. Sometimes it happens that the itching is so trivial, you are not aware that the miner is at work. Time, they say, makes great discoveries. The discoloured part turns out to be the nest of the chegoe, containing hundreds of eggs, which, if allowed to hatch there, the young ones will soon begin to form other nests, and in time cause a spreading ulcer. As soon as you perceive that you have got the chegoe in your flesh, you must take a needle, or a sharp pointed knife, and take it out. If the nest be formed, great care must be taken not to break it, otherwise some of the eggs remain in the flesh, and then you will soon be annoyed with more chegoes. After removing the nest, it is well to drop spirit of turpentine into the hole; that will most effectually destroy any chegoe that may be lurking there. Sometimes I have taken four nests out of my feet in the course of the day.

¹⁰ HALLIAX.

¹¹ WATER.

² 'Every evening, before sun down, it was part of my toilette to examine my feet, and see that they were clear of chegoes. Now and then a nest would escape the scrutiny, and then I had to smart for it a day or two after. A chegoe once lit upon the back of my hand; wishful to see how he worked, I allowed him to take possession. He immediately set to work, head foremost, and in about half an hour he had completely buried himself in the skin. I then let him feel the point of my knife, and exterminated him.

More than once, after sitting down upon a rotten stump, I have found myself covered with ticks. There is a short and easy way to get quit of these unwelcome adherents. Make a large fire and stand close to it, and if you be covered with ticks, they will all fall off.'

THE MASON BEE.—The following account of the habits of the Ichneumon Fly or "Mason Bee" is given by HALLIDAY:—"While watching the progress of the "Mason Bee" in building one her villages or collection of breeding-houses in the centre of the ceiling of my dining-room. There were two days of previous investigation, not only of the ceiling, but of every part of the walls of the room, before the spot appeared to be decided upon. This, however, seems to have been done last night, for this morning as soon as it was light the building commenced. The houses are formed of clay, tempered with some gummy liquid; the foundation is laid in a circle, and rises in the form of a cone. It is not often that the bee builds on the ceiling; she generally prefers the panel above the room-door, or one of the side-posts, and will sometimes erect ten or a dozen of these separate habitations, and they are always placed in a crucial form.

One good old lady took up her position within a foot of the sofa on which I was accustomed to lounge during the extreme heat of the day. I therefore could watch all her motions without any trouble. I copy here the memorandum made at the time: "House completely built in about three hours; diameter of the foundation-circle 6-8ths of an inch, height when completed, 5-8ths, and door or chimney projecting scarcely 1-8th. I could not decide whether more than one bee was occupied in the construction, because they are so much alike; but there never have two appeared at the same time." When the building was finished, it was left for the remainder of the day to consolidate, and it soon became hard and dry. Next morning, as soon as the sun was up, I found the labourer of the preceding day arrive, and in her arms a long slender green caterpillar. She approached the open door or chimney, but did not rest on it, for while hovering on the wing she contrived to push the head of the caterpillar into the hole, and then gradually, and by piecemeal, to force in the whole body. As soon as this was fairly out of sight, she took her departure, and in five minutes returned with another victim. I counted seven of these caterpillars pushed into the same building. The eighth time she returned without a caterpillar, but with a load of clay, with which in an instant she closed up the open door, and immediately began to lay a new foundation. This she finished before noon, and left it to dry for the rest of the day. Next morning I saw her bringing the caterpillars, but did not remain to count them.

¹⁰ 'I allowed the progress to go on for four days, when with a sharp table-knife I removed the first nest from the wainscot, and found the ova hatched, and the caterpillars, in whose bodies they had been deposited, nearly all destroyed by the young grubs. In the second the ova had not burst, and in the third the cell was quite crammed with the still fresh bodies of the green caterpillars. I found in the huts that had not been disturbed, the wall broken on one side or other, and that when taken down they were quite empty. Here then we find the insect first preparing a prison for the caterpillars, in whose bodies she deposits her ova for the purpose of being hatched, and which bodies also supply the young with food, until able to destroy the wall of the building, and find nourishment elsewhere.'

THE MARABUNTA OR GUIANA WASP is not so large as those found in England, but its sting is much more painful. It requires the traveller to be cautious, as he wends his way through the forest and creek. ⁸ 'Some make their nests pendent from the branches; others have them fixed to the underside of a leaf. Now, in passing on, if you happen to disturb one of these, they sally forth and punish you severely. The largest kind is blue; it brings blood where its sting enters, and causes pain and inflammation enough to create a fever. The Indians make a fire under the nest, and after killing, or driving away the old ones, they roast the young grubs in the comb and eat them. I tried them once by way of desert after dinner, but my stomach was offended at their intrusion; probably it was more the idea than the taste that caused the stomach to rebel.'

⁹ 'There is another wasp, above an inch long, but very slender in shape; body of a purple colour, legs yellow, sting very long; their nests are in the roofs of houses, or in hollow trees.'

⁴ 'THE COMMON "HARDBACK" is so called from its incredible strength. It is not an inch in length, and yet if a heavy book or tumbler, or plate, is placed on its back, it walks away with it with the most perfect ease and "nonchalance." Two or three of them disposed properly will move a very heavy weight, such as a vase or lamp. They are considered in this country as indicators of weather, generally making their appearance before or along with rain. Upon such occasions they sometimes arrive in such numbers as to defy computation; thus at a ball they have been known to fly into the ball-room and fall down on the floor in such numbers that they had literally to be twice swept before the dancers could resume their performances. They are rarely or never seen during the day, and are supposed to burrow and breed in the ground, for they are often spotted with dirt or mire.

They have been noticed to issue at times from dense foliage, and occasionally rolled up in leaves. They simulate death when taken, and if thrown away remain motionless until the supposed danger is over. They are greedily devoured by fowls, cats, &c.'

Beetles are found in great variety:

⁴ 'THE STAG-HORN BEETLE (*Prionus cervicornis*) is armed with saw-like mandibles, with which it is known to be able to saw off branches of trees. Sometimes they are met with basking in the sun on trees, and I have myself found them in such situations; at other times

⁴ 'they hide in dark holes, especially kitchen chimneys, where I have more than once met with them. The larvæ gnaw their way into wood (especially the gossampinus and silk-cotton trees), and are eaten as a relish by some of the native tribes. The adult insect feeds also on wood, and in sawing across branches of trees swings itself violently round, thus converting its serrated mandibles into a circular saw.

THE HARLEQUIN BEETLE (*Aerocinus longimanus*) derives its name from its parti-coloured dress, which is red, black and grey. It certainly does not deserve it for its agility, for it is a slow, heavy insect, which is to be seen lazily crawling upon the steps or branches of trees. The beautiful colours of the elytra fade after death, but are best retained by immersing the insect in spirits of wine. It makes a loud noise when disturbed or excited. It feeds upon wood, but I have never seen either its eggs or larvæ.

There are several species of *Cerambyc* and *Leonia* peculiar to British Guiana. I have seen them flying about at night, and also during the day, and I once encountered one flying across our broad river in the face of a strong wind; it seemed much distressed, and fell on a wharf, where I captured it. The *Cerambycidae* are a beautiful and useful tribe of insects. They excavate old wood, deposit their eggs inside decaying trees, which the larvæ assist in removing. The larvæ of several species are also eaten by some people, who esteem it a delicacy. The "Cossus" of the ancients is supposed to have been the larvæ of *Cerambyx heros*.

THE TORTOISE BEETLES (*Casside*) are pretty numerous here. They live, feed, and breed on some of our aromatic shrubs and other plants. The larva, when about to become a chrysalis, attaches itself to the under part of a leaf, where in about three weeks it issues forth a perfect insect. They are in general small, and very prettily marked.*

THE GRASSHOPPERS are very numerous in appearance and habits, they resemble the European species.

THE CRICKETS (*Gryllus campestris*)—⁴ 'Those without wings (*Phasma*) attain sometimes a considerable size, and look exactly like dried stalks. I once saw one here which was nearly twelve inches long, it was brought from Berbice. The crickets (*Gryllus campestris*) are common here, but do not infest the houses so frequently as the house cricket of Europe (*Gryllus domesticus*). These insects chiefly appear at night, and burrow in the daytime in holes in the ground, where they sometimes may be seen watching for smaller insects, on which they prey. The female lays an immense number of eggs.

One species known here as the Arianke (*Gryllo talpa*), is a frequent visitor of dwelling-houses during rainy weather, especially at nights, when they add to the insect nuisances of the tropics. They are surprising jumpers, and light on the head and hands, but without doing any harm beyond the fright they occasion to sensitive persons. You can see they have been spending the day in mud holes, for their fore feet are often soiled with clay.

⁴ DALTON.

* NOTE.—At page 151 the Knife or Razor-Grinder Fly has been erroneously designated as the Rhinoceros Beetle. The insect known as the Razor-Grinder (or 6 o'clock) as is commonly termed, is found throughout the Colony, and is remarkable for the peculiar sound it gives forth as it flies from tree to tree, which much resembles a Razor-Grinder at his wheel, and what is also most singular, at the almost exact hour of 6 o'clock P.M.

⁴ 'They are in general about one inch in length, and are very formidable looking creatures, and irritate the skin with their rough legs.'

THE SANDELY is a very troublesome insect which is found on the coasts. It occasions severe pain, and much local irritation. It is so small as almost to defy detection.

THE WALKING LEAF—PRAYING MANTIS—DRIED STICKS.—⁴ 'are singular looking insects. These are frequently to be seen on the branches of trees and plants, from whose leaves it is almost impossible at a distance to distinguish them. They are often seen resting immovable on some slender leaf-stock, with their fore legs raised, as in the attitude of prayer. This is regarded by many as the act of supplication, but, in truth, it is the reverse. The cunning creature is on the watch for its prey, and observing a small insect to pass, cautiously stretches out its paw, and seizes the unsuspecting victim, who all the time considered its captor a mere leaf. The wings, when present (for some species are apterous) and extended, present a most beautiful sight, and the wonderful resemblance to a leaf is still more perceptible, so that some excuse must be made for the insects who suffer from "mistaken identity." These insects, indeed, instead of praying, are very fond of fighting, and often destroy each other in single combat. They enclose their eggs in small gummy-looking bags, which they attach to leaves or other substances where the young mantis is hatched.

THE "DRIED-LEAF" insect is brown in colour; it is called *Mantis siccifolia*, its habits are much the same as the other.'

THE BURN SPIDER ⁹ 'is about two inches long, of an oval form, the abdomen covered with black hair: the fore part of the corslet is almost square, to which are connected five pairs of legs, about two inches long, armed at the end with two yellow claws; from the mouth project two teeth, in form of inward-pointed pincers. It makes a strong, thick web, but small in proportion to its size. It is asserted the females carry their young ones in a bag or web, which they deposit beneath the belly. The bite of this spider causes a violent inflammation, which no doubt proves fatal to its prey, which is composed of large and small insects.

THE COMMON HOUSE SPIDER is somewhat less than the preceding, of a light grey colour, making no web, but pursuing the cock roach and other insects when it grows dark; the bite is not dangerous to the human species, nor are its pincers strong enough to penetrate the skin.

THE TARANTULA is about three-quarters of an inch in length, of a light green colour, with diagonal stripes of yellow; body divided into two parts, the lower or abdominal part of the form of a pea; fore feet of a bluish colour, with sharp-pointed claws, which it turns on every side as if it expected to be attacked. They inflict, when laid hold of, a painful and venomous wound, difficult to heal, but not endangering life. There is another species of tarantula, of a larger size, and black colour in the body, armed with yellow claws, chiefly confined to the forests.

THE SCORPION is a very formidable insect, it is usually about three inches long, of which the tail is one-third: the body shaped like a lobster, and of a grey colour; from its neck proceed two claws, having three divi-

sions or joints, and armed at the end with a pair of sharp-pointed forceps; the other four pairs of legs resemble those of a spider: tail jointed, and at the extremity a crooked tube of a horny substance, containing a liquid, which the insect injects into the wound inflicted by it, and causes it to swell and become exceedingly painful. The scorpion preys upon other insects, and will not attack an individual unless in defence, for which it is always prepared, flying with its tail coiled over the body.

THE CENTIPEDE.—There are many of these fierce and venomous creatures found in this colony, and cause no small annoyance to residents. They are generally about five inches in length when adult, but larger specimens are sometimes seen. The centipede is a kind of caterpillar and is provided with a tremendous pair of forceps, proceeding from the head, and, like the scorpion, inflicts a severe wound when irritated. The body consists of twenty articulations, each having a pair of legs attached, with which the insect runs with amazing quickness.

These noxious vermin will sometimes breed in houses, but do not attain above half the size before mentioned.

⁴ There is scarcely a house which cannot furnish one or more specimens; the largest kind seldom met with in the city, but chiefly among decayed woods, or under stones up the rivers. I have had a specimen in my possession which measures ten inches in length, and three-quarters of an inch in breadth; the creoles call them "forty legs," but they have forty-two legs and eight eyes. They feed on decomposed animal and vegetable matter, and are fond of hiding amongst coats, gowns, linen, boots, and shoes, where it is very inconvenient sometimes to meet with them. They avoid the light, or, perhaps, the dangers which light exposes them to; they attack other insects, and prey on cockroaches, and are, in turn, greedily devoured by poultry; they lay their eggs in clusters, like little berries on the ground, and the female chooses an obscure place for this purpose, as under flower-pots, where she can remain until the eggs are hatched. They are very tenacious of life, and if cut across the severed portions will twist and writhe about for some time.

ANTS.—Regarding Ants found in British Guiana, Dr. Dalton observes, ⁴ "That there is scarcely a tree that is examined but some specimen of the ant may be found. They are the delight of naturalists, and the torment of housekeepers and labourers. It must be admitted that they interfere sadly with the pursuits of gardening, botany, and other agreeable occupations in the fields and forests; for it is barely possible to escape an assault from them when thus engaged. Thus, in traversing a wood, you may discover a beautiful orchideous plant, perched on some branch; but almost invariably alongside of it there is an ant's nest, which stands between you and your prize. I have never been able to ascertain the exact number of species met with in this colony; they are numerous, however, and I have already seen upwards of twenty different kinds, having about fifteen of the most interesting in my cabinet. One of the largest that I have seen is—

THE CUSHI, OR BIG-HEADED ANT (*Formica vel alta Cephalotes*); it is nearly an inch in length, at least the winged insect is, and is

of a reddish-brown colour. It is met with chiefly in the country, and resides habitually in the wooded interior, especially in sandy places; but now and then a species of emigration takes place, and thousands of them are to be seen marching in dense columns of extraordinary length. Save to an eye-witness, the discipline they maintain, and the destruction they occasion to their enemies whilst in their campaign, is almost incredible. The insects placed side by side—the numbers on one line varying according to circumstances—follow in long undulating files the path chosen by the commander-in-chief, some veteran and huge cushi, who is assisted apparently, by aides-de-camp; for numerous ant-, conspicuous from their size and bearing, are observed marching at the sides of the columns, apparently for the purpose of keeping the *corps d'armée* well together. Thus drilled and formed, they traverse miles of ground, turning neither to the right hand nor to the left, but wending their way towards the several objects of their pursuit. They enter houses, the inhabitants of which are glad enough to decamp, knowing, however, that the demonstrations of the cushi army are, on the whole, friendly, inasmuch as they clear the rooms of various household nuisances, such as cockroaches, beetles, spiders, &c. But it must be admitted that they also strip useful trees of leaves and buds—such as the vine, and occasion other spoliation in their remorseless march, so as often to deprive the native settler or traveller of his stock of cassava, grain or other edible products. In one instance to my knowledge, they appeared only at night, and ravaged a beautiful vine; in the morning the leaves were nearly all stripped off, but not a cushi ant was to be seen; the next night they again carried on the work of destruction, and so on for several nights, until the spoliation was complete. In like manner, they attack larger trees, and carry home to their dwelling-places the products of their plunder. These dwelling-places are conical hillocks constructed of earth, or woody tissue, and are commonly seen in the forests.

There is a species of hairy ant about three-quarters of an inch in length, of a black colour, with yellow stripes in the thorax and abdomen, which is solitary in its habits, and may often be seen in sandy places. This insect (*Mutilla diadema*) I have never seen with wings. They are very cautious and shy in their habits, and sting severely. They build in the ground, for when chased they disappear rapidly in subterranean passages, and I have never met with them in nests elevated above the soil. The male insects are said to alight on flowers, being winged; but they are not so commonly noticed as those without wings. Other species are known, viz.:—*Mutilla larvata*, *Mutilla perspicillaris*, *Mutilla parallela*.

I have in my cabinet two specimens of ants, which are by far the largest of any others in the colony. They belong to very different tribes. The largest including the wings, is upwards of an inch in length, its colour reddish-brown, and the wings yellowish and very powerful. The head is small in comparison, and of a triangular shape, the two upper mandibles crossing one another; the antennæ small and geniculate; the thorax and abdomen are very large, globular, and of equal size, the latter connected to the first by a slender pedicle. It is called by the lower classes "cushi

‘‘mamma ant,’’ and is supposed to breed the real cushi. It is often seen with them, and may have some connexion with the others. The other specimen is about an inch long, and has an enormous oval-shaped head, placed vertically, the mandibles forming about one-third of the head, being serrated. The antennae are very long and geniculate; the legs are also long, especially the hinder pair; the abdomen constricted in its middle, is connected by an irregular, or anvil-shaped, pedicle to the thorax, which is gibbous.

The famous Monouri Ant, which is used by the Indians as one of the ingredients in preparing the deadly vourali poison, is about three-quarters of an inch long, and of an entire glossy black colour, with a triangular shaped head, areolated and crossed mandibles, two-lobed thorax and oblong, many-lobed abdomen. It is solitary in its habits, bites or stings so severely as often to occasion fever, and is used by the natives to test the hardihood and prowess of aspiring youths. It is met with on the ground in woods, and about the roots of trees and dry leaves. The following species of ant are also found here: *Ponera clavata*; *P. crassinoda*; *P. apicalis*; *Formica atrata*.

Another species is closely allied to the monouri, but is not so much dreaded; indeed, the Indians have a habit of rousing their indolent children by subjecting them to the stings of these ants, which are called Youcon (*Myrmecodia*). It is about the same size and appearance as the monouri, very black and glossy, but the thorax is divided by sutures into three segments. The antennae in both are large and geniculate, being also curled at the tips. Their haunts and habits are much the same as the others which they so much resemble.

Another species of black ant (*Cryptocerus*), but which is very different in shape to the two others above-mentioned, is gregarious in its habits. The head is flattened, square, and emarginated; the antennae small, and fitting into grooves at the side of the head, at the posterior angles of which are two spines; the thorax is very irregularly shaped, and spinous; the abdomen almost globular, and joined to the thorax by two knots. They are of very different sizes, being generally about half an inch long. They are armed with stings, but are generally harmless. I have observed a colony of these ants in the same place for the last six years. This chosen locality is a row of palings close to a house in the country, and although the staves have been painted, and latterly coated with tar, these insects have never abandoned the spot. In dry weather they are to be seen in great numbers running along the ledge which traverses the palings, and have apparently made an excavation or nest in one of the larger corner posts, where a wide orifice leads to their abode. I have repeatedly pushed in small pieces of wood to disturb them, but they very soon removed the offending intruder, and bit at it sharply with their mandibles. They climb the neighbouring trees, and perform expeditions on the ground, but in wet weather very few of them show themselves out of doors. Another allied species is *Cryptocerus pusillus*, whose habits and appearance are similar to the other.

There is a large species of ant called by the negroes ‘‘Yager, or hunter

‘ants.’ I once stumbled upon a host of them, which had taken up their abode in an old box which had long been undisturbed. The commotion in consequence of the opening of the lid and moving of the box was indescribable. They swarmed in all directions, and endeavoured to escape; most of them had large wings folded horizontally. Some of these ants were nearly an inch long, but in general they were only about half an inch.

The head is black and of an irregular triangular shape, flat beneath and round above; antennae long, geniculate, and tapering towards the tips; thorax black; abdomen oblong, and connected to the thorax by a short, irregular pedicle; under surface of body and legs brownish yellow.

There were a great number of young ones in the larva state, in different stages of growth, and wrapped up in mummy like bags of a yellow colour and oval shape. It was singular to witness the laborious efforts made by the ants to effect the escape of these precious babies and their swaddling clothes. They seized the bags firmly with their mandibles, which are short but strong, and, scarcely able to totter with their load, yet persevered steadily in attempting to escape, and only parted with the unconscious objects of their care with their lives, for some fowls, equally interested in the discovery with myself soon made their appearance and devoured a great number, irrespective of age and sex. These ants prey greedily on cockroaches, maribuntas, flies, &c.

I am acquainted with about four or five varieties of the red ants found here.

The smallest is the palest, and is very harmless, although very troublesome in attacking sugar and other sweets. It is difficult to keep them out of the cupboards and other places where such stores are preserved; a lump of white sugar will attract hundreds of them, and their tiny bodies are quickly supplied by very minute rations: but, nevertheless, their company is always gladly dispensed with.

The common red ant (*Formica caustica*) is common about flowers and trees, and if handled its caustic acid sting is very painful, and often raises a blister, even when touched after death. It wages war with the small black ant, and I have often watched columns of the latter, loaded with spoil, retreating slowly and in good order before the advancing impetuosity of the assailing red ant. On one occasion the two armies defiled slowly across my study, and although the black ants were pursued and attacked, they presented such a bold rearguard as to prevent any great numbers of the red ants from breaking through their lines, which were occupied in carrying away in their mouths some precious burden. In this manner they slowly retired behind a brick column, where I lost sight of the belligerents.

Another species of red ant is similar to the last in most respects, but differs in being of a darker colour and of smaller size in general. They build their nests in holes in the ground, which are easily detected by the peculiar pulverised appearance of the earth immediately around the entrance, which has a sort of slight embankment thrown round it. On examining one of these subterranean passages I was surprised to find several ants larger than the others, and with such huge heads and ferocious mandibles

‘as at once to attract my attention. They were three or four times larger than the others, and if touched with a small stick seized it firmly with their jaws; but if not actually touched, turning about in all directions, with mandibles gaping, ready to seize upon anything. These larger insects are, I believe, generally regarded as neuters, or soldiers and nurses.

A larger species of red ant builds a habitation of finely pulverised earth, which is thrown up as a mound at the roots of trees, against their stems, or among low brushwood in the forests and uncultivated spots. A stick thrust in will cause hundreds to rush out, and their bite or sting is so severe as often to occasion fever. These and similar species of ant are often made useful to the naturalist by the expedition and certainty with which they dissect dead bodies of animals and birds, leaving nothing in a few weeks, after the corpse has been thrown into their nest, but the bare and polished skeletons. Many of the ants, however, feed on fruit, insects, or their larvæ—in fact, very few things come amiss to them. The ants of this species are larger than the foregoing; the colour is red, but the abdomen is much darker. There are several sizes of them in the same nest; and I have observed the same kind of large-headed ants with powerful mandibles as in the former family.

Another species of red ant (*Formica rufa*) is common in many parts of the interior, building habitations of a conical shape, like hillocks; sometimes these hillocks are met with from 6 feet upwards in height, and more than twice that size at the base. Some travellers* have asserted having met with them 100 feet in circumference at their base, and others† have declared them to be of such enormous size, that they feared to approach them lest they should be devoured. These “ant-hills” are constructed of earth and woody tissue, and although rude and coarse externally, are arranged inside with much skill and foresight against both heat and rain. The apartments are numerous and suitable for the reception of the several inmates—males, females, neuters and young ones; the latter are particularly looked after by the neuters, who carry the necessary food for them in their mouths, transport them in fine weather to the sunny side of the hill, carefully protecting them in wet weather, and otherwise defending them against their enemies celestial, terrestrial, or aquatic. The eggs of the females pass through the larva and pupa stages before they arrive at puberty or “anthood.”

Another species of red ant (*Formica sanguinea*), blood-red about the head and thorax, but with a grey-black, is also met with in the woods, and is one of those species which have been termed “Amazons,” or “Legionnaires,” by M. Huber, and which, like the driver ants of Africa described by different writers, are in the habit of attacking a species of black ant (*Formica conicularia*) and invading their premises, actually kidnapping the young ones, and carry them as slaves to their own habitations, where they compel them to work and assist in the rearing of their young.

There remains now but a few more species of ants which merit atten-

* DALTON.

† Stedman's Surinam. Darion.

† Malouet.

¹¹ tion. The small COMMON BLACK ANT (*Formica bispinosa*) is too well known to require any description of it. Their numbers are incredible, for there is scarcely a house, tree, or plant but contains its hundreds and thousands. These are the ants which so particularly attach themselves to the aphides or wood lice, and extract from them their saccharine nutriment. They are never known to sting, and are uniform in size. They live inside crevices of trees and other wood, where they appear to have excavated passages or apartments which they more or less cover over, or protect with a light powdery substance.

I have observed that this species of ant also builds a small nest of a membranous texture, which it suspends to the branches of trees. When first I saw these minute nests I took them for the habitations of some small species of maribunta. On examination, I found, to my surprise, that they were inhabited by small black ants. The size of the nest is about one inch square, and is shaped like a keg. On breaking into it I found it constructed of numerous tiers or layers flat in the centre, but divided at the sides into a number of narrow cells or divisions, separated one from the other by membranous bands: in some of which were found small white eggs and oblong larvæ enclosed in cases, and also numerous winged ants, similar in structure to the others, but many had white antennæ, and seemed very feeble, hiding themselves in the cells; I also noticed that some of the ants were much larger than the others. When disturbed, it was curious to observe the common ants seizing the larvæ and eggs, and hurrying away with them to place them in security in another tier, and returning for more eggs and larvæ.

THE GROE-GROE WORM ¹² is produced in a tree called the *mountain cabbage-tree*, which is one of the palm species. The worm grows to the size and thickness of a man's thumb, is produced from the spawn of a black beetle, and is extremely fat. However disgusting to appearance, these worms are a delicious treat to many people. The manner of dressing them, is by frying them in a pan with a very little butter and salt, or spitting them on a wooden skewer. In taste they partake of all the spices of India, as mace, cinnamon, cloves, nutmeg, &c. Several species of these worms are produced in all the palm-trees when beginning to rot, but some are larger than others.

BUTTERFLIES ⁹ are very numerous, and of every colour that it is possible to conceive; they are much larger than those of Europe, very similar in shape, but far surpassing them in splendour and variety of tints and shades.

CHAPTER VIII.

THE ANIMAL KINGDOM—(Continued)—Birds.—The Eagle—Falcons—King of the Vultures—Hawk—Carriou Crow—Owl—Parrots and Parroquets—Love Birds—Macaw—Toucan—Kiskadi—Fire Bird—Wallababa—Bell Bird—Sakis—Thrush—Lazy Bird—Cock of the Rock—Swallows—Goat Sucker—Mocking Bird—Troupiale—Rice Bird—Uibouri—Jawarracirie—Humming Bird—Houtou—Baelora—Cuia—Old Witcher—Jumbi Bird—Woodpeckers—Butcher Bird—Cuckoos—Maam—Powiso—Maroudi—Donraquara—Hannqua—Stinking Bird—Sun Bird—Trumpeter—Tiger Bird—Pigeons—Gouldins—Snow White Egrette—Heri—Jabim—Spoonbill—Curry Curris—Water Hen—Darters—Viciasy and Wild Ducks, etc.

British Guiana yields to no country in the world, in her wonderful and beautiful productions of the feathered race. Here the finest precious stones are surpassed by the varied tints which adorn the birds. Our description of some of the most remarkable shall begin with the

CRESTED OR GREAT HARRY EAGLE—This is a very fierce bird, and also very strong and sometimes measures seven or eight feet across the wings; the back is black, but yellowish at the base; the breast and belly white, with black spots, as are its thighs, and even the feathers of its legs; the rest of the body is entirely brown, and the bill and claws yellow. The head of this bird is flat, ornamented with a crest of four black feathers, two long and two short, which it can erect or depress at pleasure. A fine specimen of this bird was a short time since shot by an Indian at a woodcutting establishment on the Berbice river. A gentleman who was present, gives the following description:—"This bird, true to its nature, stole or rather pounced upon a full grown powise which an Indian hunter had wounded severely, and perched on a very lofty tree, with its booty. The Indian not being well pleased, shot it in turn and secured both. The claws when expanded, would have compassed a child's head, of say, three or four years of age. The expanse of the wings was almost incredible."

⁹ THE FALCON of which there are two or three species, differs very little from those of Europe in shape or size, and is chiefly distinguishable by the colours.

THE WHITE FALCON (so called from its body being of a beautiful clear white), has wings and tail like a swallow, of a bright glossy black, as are also the legs and eyes.

THE BROWN FALCON like the former except the

⁹ 'colour of the body, which is brown, with the belly and thighs covered with yellow spots.

THE SPOTTED FALCON is a most beautiful bird, about the size of a pigeon, and similar in shape to the preceding; head, beak, wings, and tail, black; legs yellow and breast a deep orange, with white specks scattered over the whole body.

THE KING OF THE VULTURES, an immense bird, as large as the black eagle, is of a pinky white, or flesh colour, in the body; wings black: head and neck (entirely divested of feathers) of an orange and rose colour, alternately shaded; the beak is overhung with a fleshy substance, also of an orange colour, curiously shaped, like an ornamental tassel. The eyes of a light pearl colour, are round and large and sparkling; around the neck, above the breast, is a kind of collar of thick rough feathers, of an iron grey colour, which serves it as a safeguard to draw its head into when likely to be stung or wounded by the venomous snakes upon which it usually feeds.'

Waterton gives the following description of the King of the Vultures:—³ 'The head and neck of the king of the vultures are bare of feathers; but the beautiful appearance they exhibit fades in death. The throat and the back of the neck are of a fine lemon colour: both sides of the neck, from the ears downwards, of a rich scarlet; behind the corrugated part, there is a white spot. The crown of the head is scarlet; betwixt the lower mandible and the eye, and close by the ear, there is a part which has a fine silvery blue appearance; the corrugated part is of a dirty light brown; behind it, and just above the white spot, a portion of the skin is blue, and the rest scarlet; the skin which juts out behind the neck, and appears like an oblong earuncle, is blue in part, and part orange.

The bill is orange and black, the earuncles on his forehead orange, and the cere orange; the orbits scarlet, and the irides white. Below the bare part of the neck there is a cinereous ruff. The bag of the stomach, which only appears when distended with food, is of a most delicate white, intersected with blue veins, which appear on it just like the blue veins appear on the arm of a fair-complexioned person. The tail and long wing-feathers are black, the belly white, and the rest of the body a fine satin colour.

I cannot be persuaded that the vultures ever feed upon live animals, not even upon lizards, rats, mice, or frogs; I have watched them for hours together, but never could see them touch any living animals, though innumerable lizards, frogs, and small birds swarmed all around them. I have killed lizards and frogs, and put them in a proper place for observation; as soon as they begin to smell, the aura vulture invariably came and took them off. I have frequently observed, that the day after the planter had burnt the trash in a cane-field, the aura vulture was sure to be there, feeding on the snakes, lizards, and frogs which had suffered in the conflagration. I often saw a large bird (very much like the common gregarious vulture at a distance) catch and devour lizards; after shooting one, it turned out to be not a vulture, but a hawk, with a tail squarer and shorter than hawks have in general. The vultures, like the goatsucker and woodpecker, seem to be

'in disgrace with man. They are generally termed a voracious, stinking, cruel, and ignoble tribe. Under these impressions, the fowler discharges his gun at them, and probably thinks he has done well in ridding the earth of such vermin.

Some governments impose a fine on him who kills a vulture. This is a salutary law, and it were to be wished that other governments would follow so good an example. I would fain here say a word or two in favour of this valuable scavenger.

Kind Providence has conferred a blessing on hot countries in giving them the vulture; he has ordered it to consume that which, if left to dissolve in putrefaction, would infect the air, and produce a pestilence. When full of food, the vulture certainly appears an indolent bird; he will stand for hours together on the branch of a tree, or on the top of a house, with his wings drooping, and after rain, with them spread and elevated to catch the rays of the sun. It has been remarked by naturalists, that the flight of this bird is laborious. I have paid attention to the Vulture in Andalusia, and to those in Guiana, Brazil, and the West Indies, and conclude that they are birds of long, even, and lofty flight. Indeed, whoever has observed the aura vulture, will be satisfied that his flight is wonderfully majestic, and of long continuance.

This bird is above five feet from wing to wing extended. You will see it soaring aloft in the aerial expanse on pinions which never flutter, and which at the same time carry him through the fields of ether with a rapidity equal to that of the golden eagle. In Paramaribo the laws protect the vulture, and the Spaniards of Augustura never think of molesting him. In 1808, I saw the vultures in that city as tame as domestic fowls; a person who had never seen a vulture would have taken them for turkeys. They were very useful to the Spaniards; had it not been for them, the refuse of the slaughter-houses in Augustura would have caused an intolerable nuisance.'

HAWKS—'About forty kinds of true hawks are known in British Guiana. They vary in size from the blackbird to the eagle. They prey on fish, snakes, birds, and the young of some animals, and abound throughout the country. Many species are very common, and are well known, such as the chicken-hawk, &c. The haunts and habits of most of the others are, however, but little known, except to the patient Indian who frequents their vicinity.

THE KITES first claim our notice. There are several kinds here.

One, the *Falco melanops vel asturina melanops vel milvus*, is about the size of a duck; the head, body, wings and tail, are black; the belly whitish. The beak is short, curved, and yellow; the throat is red; it has also a red patch around the eyes, which are of a reddish hue. The legs are red, rough, and scaly. These birds are called by the Indians Pullatoo. They live in flocks, and make a great noise if disturbed; their scream is very shrill. They prey on insects, eggs, and small birds, and are chiefly found in the Savannahs.

The second species is known here as the swallow-tailed kite, *Falco vel Nanclerus furcatus*, owing to the tail opening like the blades of scissors.

* The throat, head, neck, breast, and belly are white; the wings and tail of a bluish black; the tail is long; the beak short and curved; the legs short. These birds fly very swiftly, and are met with in pairs or in flocks about the sandhills and open plains.

The kites differ from the other hawks here in living occasionally on insects, and in their swifter flight. The beak and feet are weaker than those of the hawks. Numerous other species are met with.

I will content myself with dwelling on some of them only. The LARGE BROWN HAWK measures about one foot ten inches from beak to end of tail, and three feet across the wings. The plumage of the back, belly, breast, tail, and wing coverts reddish-brown, with a black patch in the centre of the larger feathers. The tail and wings are black; the plumage of the head and neck yellowish-white, with black streaks in the centre of the feathers, and a patch of black feathers in front of throat.

There are also the *crab hawk*, *mottled hawk*, *bull dog hawk*, *black and blue hawk*, *fish hawk*, and the *common chicken hawk* and several other species.

* THE COMMON CARRION CROW (*Cathartes vel vultur Jotu*) of this country is universally found both on the coasts and in the interior, either soaring on dry sunny days at an immense height in the air, or swooping down in wide gyrations towards the ground. In fine weather, when on the look-out for food, or taking a bird's-eye view of the earth, it has a quiet, steady, graceful soar, the head of the bird, if examined with a glass, being seen turning from side to side. If its attention is attracted to any inviting object, through the senses of scent and sight (for in its singular instinct in discovering dead and putrid carcases of animals it is evidently assisted by both these senses), it speedily descends, not direct, like the hawk, but in extensive gyrations or circles, and commences its loathsome meal. This movement on its part is not unnoticed by the other carrion crows similarly employed to itself, for no sooner does the fortunate discoverer direct his course to the earth, than the others invite themselves to the repast, and rapidly arrive from all directions.

If the carcase be that of a horse or ox, they perch singly or in small numbers on the body, picking with impatience at the tough hide, if putrefaction has not commenced, or waiting greedily on the neighbouring trees to watch the desired change.

OWLS.—There are about seven species of night owls, from the size of a fowl to that of a sparrow. Some are met with in the city; but up the rivers, in the forests, and in country places they abound to a great extent. They frequent the haunts of bats, and the society of young birds and small animals, on whom they prey. They associate frequently with the goatsuckers, and, at first glance, it is not always easy to distinguish between the one and the other in cases where they approach in size. The same long silky feathers, the same grey sombre livery, characterises the plumage of both birds. Their cry is, however, very dissimilar. No one who has ever heard it in the silent watching of the night can mistake the screech of the owl. Some of the owls have a most peculiar cry, and persons familiar with them recognise the

“species by their voice. I once heard in the country, at midnight, the call of an owl called here the “Jumbi, or Ghost-bird,” which greatly interested me. It gave a soft prolonged note, followed by a quick whistle or scream. There was dangerous illness in the house at that moment, and the ominous voice of this peculiar bird did not tend to reanimate the desponding spirits of those present. It proved, however, a false prophet, for the patient got well. The larger species of owls have tufts of feathers around their ears, which are very long. They are known as the horned or long-eared owls.

PARROTS AND PARROQUETS.—The Parrots (*Psittacus*) of this country are both numerous and of the most varied kind. They are constantly to be met with in the forests of the interior; but at certain seasons when the guava-trees are in fruit, they fly over town and country in large flocks of a hundred or more, arranging themselves in pairs. Very frequently only single pairs are seen faithfully wending their way together to the spot where the ripe guavas are prevalent, where they feed early in the morning, and towards sunset, at which hours they become the victims of the sportsman, who shoots them for eating; when roasted or made up in pies, they are considered excellent food, and are much sought after by the negroes. There is no difficulty in finding their place of resort, for they make an incessant noise in feeding; sometimes they are difficult to shoot owing to their lofty flight, and it requires heavy shot to bring them down as they are very tenacious of life. It would be difficult and tedious to enumerate the different species met with: the larger kinds are green in colour, and are called by the Indians “Saramaia;” one species called “Toutou,” is of a bluish green with red in the proboscis; another species, *Psittacus testaceus*, called the “Screacher,” is also bluish green with yellow round the beak; a third species, *Psittacus ochrocephalus*, well known as the “Amazon” is the most common, its colour is a beautiful green with a yellow cap, and a patch of red feathers on the shoulders; sometimes these parrots are beautifully mottled green. A fourth species, *Psittacus acquirinus*, is called “Hia-lia,” or Parrot of the Sun, it has a circle of tawny-coloured feathers round the back of the head, which are erectile; the forehead is white, the back, wings, and tail green; the breast and belly tawny. The parrots build their nests in old trees, and lay in general two eggs.

THE PARROQUETS (*Psittacula*) are smaller than parrots, and fly much swifter, not in pairs like the latter, but generally in large flocks. There are numerous species, which may be divided into the large and small; of the former the plumage varies greatly. Some are green, with black head, and orange-yellow breast, belly, and throat; others are mottled bluish black with grey breast; others bluish green with blue head; other green with brown feathers round the neck like shells, hence called Shell-necked; the head is black, tail feathers yellow and blue. One remarkable species is called the “Seven-coloured Parroquet,” it is about the size of a thrush, the head and neck are of a golden green, the breast and belly bluish green, the back and long wing feathers are of a dark brown, the rest of the wings are yellow and purple, the tail is lilac purple edged with black. These birds are chiefly met with in the creeks, and are shot only towards night.

* They feed on fruits and seeds. The female has the same colours, but they are not so vivid.

Of the smaller kinds of parrots *Psittacula* there are about eight species, some of which are but rarely seen, and perhaps never described. They are chiefly of a green colour, some with purple tails, others with golden wings; they are all beautiful; a very small species known as the "Love-bird" (*Psittacula passerinus*) is of an entire green colour, and flies in flocks about the gardens of the town and country, where seated amid the ever-green foliage, they are difficult to be distinguished from the sparkling leaves. They build their nests on trees, and sometimes a nest is found where wood-ants have constructed their habitations.

MACAWS OR ARAS have a wide-world reputation on account of their magnificent plumage and singular appearance. There are four specimens if not more in British Guiana, and they are readily distinguished from the parrots by their long tail; in general they are of a greenish colour, variegated with red and yellow. The true "Ara" has a splendid scarlet body, with patches of red, blue, yellow, and green about the wings. They fly in pairs and in flocks. Another species is of a lighter red, whilst a third is more or less blue in colour.

THE TOUCANS (*Ramphastos*), or BILL BIRDS, are perhaps the most singular looking of the ornithological tribe met with in British Guiana. They are easily recognised by their enormous bills, which in some species are about six inches in length, and fully two in depth, marked with the most striking colours—such as red, black, and yellow, and having a horny appearance. These coloured bills, unless particular attention is paid to them,* fade after death, and soon lose their brilliant hues; it is remarkable that the colours of the bill is also those of the plumage. These birds build their nests in hollow trees; they are social but not gregarious, and having short wings and such unseemly mandibles fly but little, and in jerks. They carry the tail erect, except in flying; they feed on fruit, seeds, peppers, insects, and occasionally bird's eggs, &c.; they catch the seeds at the point of the beak, and jerk them into the throat; they have a long feathery-looking tongue; their note is loud and whistling, and they generally commence to cry on the approach of rain. They are chiefly met with in the forests, where they delight in resorting to the lofty mora-trees; the Indians, knowing their haunts will shoot many of them from the same tree either with the gun or arrow. In Surinam they call the Toucan "Banara beak" or "Cujacai," and some of the Indian tribes call them "Piapoco," from the noise they make.

One species, the largest, is found on the eta and cocorita palms, it is called by the Indians "Bouradi," which is rather personal, that word signifying "noise;" the head, wings tail, and body are black, with yellow and red feathers at the throat and breast. A second species is known as the Yellow Earlet, owing to a patch of yellow feathers close to the ear; a third species has a black and whitish bill serrated at the edges; a fourth species has greenish shades, head and neck chestnut, belly and vent yellow, bill with white serratures.

170 THRUSH—LAZY BIRD—BANANA BIRD—COCK OF THE ROCK.

⁴ 'colour all over, except about the breast, where the plumage is tinted reddish.

THE THRUSHES of this country are equally interesting with those of Europe, but do not exist in such numbers; several species are met with about the city, and are known to have a sweet song. Early in the morning these birds may be heard about the houses. They are very shy, build their nests in lonely places, and are seldom molested by the inhabitants. There are six or seven different species met with; they differ much in size, but their plumage is more or less alike.

THE LAZY BIRD as it is here termed, is about the size of a small thrush, but is in no other way allied to it. Its plumage is, however, in general of a brown colour, and it has rather a long tail. It derives its appropriate name from its indolent habits; it builds no nest of its own, but in a cowardly manner deprives the little wren of this country of hers, destroying the eggs and substituting its own in place of the others. There is often great disturbance occasioned in the galleries of the houses by these domestic disputes between the excited little lady wren, thus turned out of her dwelling and robbed of her progeny, and the domineering lazy-bird, which appears to think that might is right.'

⁹ 'THE BANANA BIRD (so called from its fondness for that fruit), as large as a thrush; body chiefly of a yellow or orange colour, beak and legs horn colour, wings and tail black; it builds its nest nearly a yard in height, of a conical form, composed mostly of grass, with an opening half way down for its entrance. The bottom is semi-globular, with the upper and narrowest part fastened to the extremity of a branch that overhangs the water, in order to secure its inmate and brood from lizards and other reptiles.'

⁴ 'THE COCK OF THE ROCK is allied to the family of manakins, although much larger in size and belonging to a separate group, it is well known as the "cock of the rock" (*Pipra rupicola*), or hoopoe hen. The male is of a splendid orange colour on the body and head, the wing feathers are brown, edged with yellow and red like the tail, the beak is reddish yellow. There is a fine tuft of feathers, crescent shaped, placed on the head like a cocked hat; the eyes are yellow white; the tail is short and square, and looks as if it had been docked. The female and young birds are of an obscure brown with a diminutive comb or crest. The female lays two eggs, and scratches the ground like the common fowl, which it also resembles in other respects. They build their nests chiefly of wood among the rocks, are solitary in their habits, and live chiefly on fruit. Some of the antics exhibited by the male birds are very remarkable; they are described as inclined to dancing, and have been seen capering about throwing up the head, opening the tail like a fan; now strutting about, and scratching the ground with a hopping gait, gabbling all the time until tired, when another bird takes up the performance, the others looking on with apparent delight.'

THE MOCKING BIRD¹⁵ 'of America is universally allowed to be the most wonderful of all songsters, as it not only possesses a very fine and melodious voice, but is also endowed with the capacity for imitating the notes of any other bird, and, indeed, of immediately reproducing with the most astonishing exactness any sound which it may hear.

¹⁵ 'All persons who come within the sound of a Mocking-bird's voice are fascinated with the thrilling strains that are poured without effort from the melodious throat, and every professed ornithologist who has heard this wonderful bird has exhausted the powers of his language in endeavouring to describe the varied and entrancing melody of the Mocking-bird. Within the compass of one single throat the whole feathered race seems to be comprised, for the Mocking bird can with equal ease imitate, or rather reproduce, the sweet and gentle twittering of the blue bird, the rich full song of the thrush, or the harsh ear-piercing scream of the eagle. At night especially, when labour has ceased, "silence has attuned her ear," says Webber, "and earth hears her merry voices singing in her sleep."

Yes, they are all here! Hear then each warble, chirp, and thrill! How they crowd upon each other! You can hear the flutter of soft wings as they come hurrying forth! Hark, that rich clear whistle? 'Bob White, is it you?' Then the sudden scream; is it a hawk? Hey! what a gush, what a rolling liquid gush! Ah, my dainty redbreast, at thy matins early! Mew! what, Pussy! No, the cat-bird; hear its low liquid love-notes linger round the roses by the garden walk! Hillo! listen to the little wren! he must nearly explode in the climax of that little agony of trills which it is rising on its very tip-toes to reach! What now? Quack, quack! Plut, plut, plut! cock-doodle-doo! What, all the barn-yard! Squeak, squeak, squeak! pigs and all. Hark, that melancholy plaint, Whip-poor-Will, how sadly it comes from out the shadowy distance! What a contrast! the redbird's lively whistle, shrilly mounting high, higher, highest! Hark, the orchard oriole's gay, delicious, roaring, run-mad, ranting-riot of sweet sounds! Hear that! it is the rain-crow, croaking for a storm! Hey, day! Jay, jay, jay! it is the imperial dandy blue-jay. Hear, he has a strange, round, mellow whistle too! There goes the little yellow-throated warbler, the woodpecker's sudden call, the king-bird's weeful clatter, the dove's low plaintive coo, the owl's screeching cry and snapping beak, the tomtit's tiny note, the kingfisher's rattle, the crow, the scream, the cry of love, or hate, or joy, all come rapidly, and in unexpected contrasts, yet with such clear precision, that each bird is fully expressed to my mind in its own individuality."

Yet all these varied notes are uttered by the one single Mocking-bird, as it sits on a lofty spray or flings itself into the air, rising and falling with the cadence of its song, and acting as if absolutely intoxicated with sweet sounds.

Let it but approach the habitation of man, and it straightway adds a new series of sounds to its already vast store, laying up in its most retentive memory the various noises that are produced by man and his surroundings, and introducing among its other imitations the barking of dogs, the harsh "setting" of saws, the whirring buzz of the millstone, the everlasting clack of the hoppers, the dull heavy blow of the mallet, and the cracking of splitting timbers, the fragments of songs whistled by the labourers, the creaking of ungreased wheels, the neighing of horses, the plaintive baa of the sheep, and the deep lowing of the oxen, together with all the innumerable and accidental sounds which are necessarily produced through human

¹⁵ means. Unfortunately, the bird is rather apt to spoil his own wonderful song by a sudden introduction of one of these inharmonious sounds, so that the listener, whose ear is being delighted with a succession of the softest and richest-toned vocalist, will suddenly be electrified with the loud shriek of the angry hawk or the grating whirr of the grindstone.'

The Mocking Bird ¹⁶ is larger than the starling, of a black and yellow colour, with its beak of a sulphur tint; delights (as most of the birds of this continent do,) to take up his abode near the habitation of man; his note is sweet and short, but if a sheep bleat near him, a dog bark, or a hen cackle, he stops his own note, and instantly commences with apparent delights an imitation of the animal he hears, with a mimicry quite extraordinary. The nests are pendulous, and suspended from the outer branches of trees, similar to those of the Banana Bird, to which it is a near species, if not actually identical; but the latter is not so perfect in its imitations, which is in all probability the reason they have been distinctly classed.'

THE HERI.—¹⁷ There is a bird here called the heri, which is of the stork tribe. It has a long feathered neck; small head, with long, thick, and straight beak, and red patch around the eyes, which are brown; plumage of body dirty white; wings and tail black. It stands from four to five feet in height, and is met with in savannahs and swampy places, where it preys on fish, snakes, &c. It utters a peculiar cry like the stork.

THE JABIRU—NEGRO COP.—The Jabiru frequents the banks of rivers, feeding on fish and reptiles. It is of a white colour, with black wings, which often measure six feet across. The largest species, however, is the "jabiru"* (*Mycteria americana*), which stands about six feet in height, and sometimes weighs 20 lbs. or more; it has a bare head and neck of a black colour; the beak is also black and measures about sixteen inches in length, being curved upwards; the young birds have a tuft of feathers at the back the head; the colour of the plumage is a dirty white; it has a red patch around the neck, hence one of its numerous names "collier rouge;" the feathers are long and downy, part of the wings is black. On account of its black head it is known here as the "negro cop." The young ones are grey in colour.

THE HONOURI STORK. This bird is about three feet in length when erect; the head is of a bluish black at top, with long pendant feathers; the neck is white at the sides, but of a bluish white in front; eyes black with yellow borders; the beak is of an orange yellow, with light blue membrane at base; the body is white; the wings lead coloured, and tipped black; long pendant feathers hang from the body; the legs are of a brownish colour. A wounded bird of this species was lately brought to the city, and was placed in a trench secured by a rope; it fed on fish and reptiles, but soon managed to effect its escape.

THE WOOD PELICAN (*Tantulus loculator*) is occasionally seen in swampy marshes, and about the river sandbanks, where, sometimes in great numbers, they may be seen feeding along with the storks and cranes, whose habits

¹⁵ Wood's Natural History.

¹⁶ M. MARTIN.

¹⁷ DARTON.

* The word "Jabiru" in the Guaraní language signifies inflated, and is applied to this bird on account of its large neck, which is capable of distension. It is called Taramira by the Macuzis, and M...

they partake of. It is a large bird, about the size of a stork, but more slender; the skin of the head and neck is naked of feathers, and is of a blackish colour; the bill and feet are also black as well as the quills of the wings and tail.

Of the long-billed waders there are numerous species here. First in beauty and size are the birds so well known as

THE CURRI-CURRI or SCARLET CURLEW (*His curri-curri*) are two kinds, distinguished only by the colour of the beak, one is black, and the other whitish. The plumage of the scarlet curri is magnificent in the extreme, being of a rich scarlet colour all over, with the tips of the wing feathers jet black. When young the plumage is blackish grey, changing gradually to a lovely white when they are ready to fly, the scarlet hue being acquired with age. The beak is long, slender, and sabre-shaped; the eyes bluish grey; the legs red. These splendid birds are frequently seen flying about in flocks near to the city, and about the coast. They are, however, most plentiful about August and September, when they are also in finest plumage. They fly in general very high, and their flight is wedge shaped, the old birds leading at the front. In fine clear weather the effect is most striking, the waving lines of the wings in the air like the pennon of a war vessel, and their graceful evolutions when alarmed, added to the glittering hues reflected in the sun-light, are very beautiful. They are difficult to shoot, being very shy and constantly on the alert. There is a species of curri-curri known here as the greenish curri, it is a splendid bird of a greenish olive and bronze colour, and is found in swamps and creeks, where it is generally found towards night. The black curlew (*Numenius phaeopus*) derives its name from its cry. It is smaller in size than the curri-curri, which, except in colour, it otherwise resembles. The wings, head, and neck are grey; breast and belly whitish; eyes black; beak long and curved. Mr. WATERBURY mentions a species of black curlew, with a white bar across the wings, but I have never seen it. The whistling curlews are to be met with at all times of the year, and are most plentiful in September. They fly singly, or in flocks, and are much esteemed for the table.

MARTINS AND SWALLOWS are constantly seen on the sugar estates, where they frequent the neighbourhood of the "megass logies," (large wooden buildings like barns, open at the sides, and used for the drying of megass or dried cane after the saccharine juice has been crushed out by rollers), no doubt for the number of flies and other insects which abound there. Early in the morning, and about sunset, the swallows are particularly active, their rapid and graceful movements in eager search for prey invisible to human eyes afford an interesting sight to the naturalist.

One species of swallow met with up the Demerara river is exactly four inches long, including the tail, it measures also four inches across the wing. It has a blackish head, wings, back, and tail, the rump is white, the throat whitish, whilst the belly is of a buff colour speckled brown and grey; the tail is short and square, and composed of ten feathers which

have their quills or shafts projecting beyond the barb, and very sharp pointed; the legs are not feathered low down.

A second species is of the same size as the above, but it has a forked tail about three inches long. It is of a blackish colour on the head, back, wings, side and tail, but the feathers on the head, back, tail, and wing coverts are edged white; the throat and belly are whitish. The legs are feathered as far as the toes.

A third species (*Hirundo purpurea*) is larger than the other two, and is of a deep bluish black on the head, wings and back, whilst underneath it is white; the tail is square.

These birds are chiefly seen among the shipping, and oftentimes rest on the courida trees adjoining the river.

THE CUCKOOS.—The habits of the (*Cuculus*) of this country are much the same with those of Europe, they lay their eggs in the nests of other birds, and feed on insects; but I have never heard them repeat the same plaintive note as the others. They are to be met with in the forests, and do not approach habitations. There are four or five species here. Two of different size are of a brick-red colour, with long tails tipped with white; light red beak, overlapping at top. The larger species is of the same size as the English cuckoo, but the tail is longer. A third species is of a speckled grey brown, like the woodlark, with a crest on its head, dark eyes, and light brown beak short and curved. The fourth species is of a leaden colour with a whitish breast.

THE STINKING BIRD (*Phasianus cristatus*).—This very impolite name is derived from a most offensive odour which emanates from this bird during life, but when dried and stuffed, as proved by a specimen in my possession, there is not the least unpleasant smell. It measures about two feet four inches in length. The head is small, the beak short and crooked; it is of a greenish brown colour, variegated with white above. The front of the neck and tip of the tail fawn-coloured; the belly chestnut. The head is ornamented with a tuft of long and slender feathers. It is found in the marshy lands, and feeds on leaves and the seeds of a species of arum. The flesh on account of its odour, is used as a bait.

PIGEONS AND DOVES.—Of the family of Pigeons (*Columbæ*) there is a great variety in this country, which vary in size from a sparrow upwards. The number of species must be twenty, if not more, of which I have seen about twelve. These birds are met with at different seasons, except the ground doves, which are to be seen all the year round. Some pigeons feed in flocks in the woods, attracted thither by the ripening of certain fruits, such as the wild figs, &c. Others fly across the country singly or in pairs during certain months, generally from September to December. Some of the larger kinds dwell more or less constantly in the vast forests, where they appear to feed lone, and breed. Without entering upon any account of domestic pigeons, of which great numbers are kept both in town and country, I shall here only allude to some of the most remarkable of wild pigeons. Of these, that known as the Itaribische pigeon deserves first notice. These beautiful

⁴ birds are chiefly met with up a creek in Essequibo called the Itaribisehe. This large creek is a tributary of the river Essequibo, and is of great size and beauty. Its waters are dark but translucent, and deriving their origin many miles in the interior, meander through the most lovely scenery—sometimes swelling out into a large lake amid open savannahs, or flowing through rich forest land and sandy hills, at times so shaded and encroached upon overhanging trees and flowering shrubs as to be almost impassable. It is in this romantic neighbourhood that the pigeons resort about the month of October, to feed on the berries and plants of particular trees. Their plumage is reddish brown on the back, wings, and tail; sides and belly parti-coloured grey and brown; neck and breast speckled white; beak and legs red. The male is distinguished by its more brilliant plumage. These birds are very shy, and require to be severely wounded before they drop.

The common wood-pigeons are also pretty birds, seen frequently in the forests, where they startle the traveller by their rapid flight. They resemble somewhat the same description of bird in Europe. Another species of large pigeon frequents the woods at certain seasons, where they may be seen resting on the withered branches of trees. They are of a light brown colour, with various patches, and are considered excellent food. The pigeons in general here build their nests of wood, on the branches of thick trees.

THE DOVES may be divided into the large and small, the latter being very common, and known as ground doves, feeding along the roads and in gardens, where they become more or less tame. There are three or four species of this small but beautiful dove, which are variously covered grey, brown, slate, or lead colour, with black spots. They are about the size of sparrows, and construct their nests of coarse grass, loosely arranged in a circular form, but inside the greatest pains is taken to make them comfortable, being generally woven with fine grass and delicate fibres. The female generally lays two eggs of a whitish colour. These birds feed on grain and small insects. There is a large species of dove much like these small ones in colour and general appearance.

THE WATER HEN.—There are two species of water hen, one is greyish in colour. The common water hen (*Fulica chloropus*) is a pretty-looking bird about twelve inches long, with small head and short tail; it frequents marshy spots, and feeds on fish. Its plumage is a dark slate colour, except about the thighs and tail, where there are white feathers; it has a red caruncle on the forehead, the base of the beak is red, and the tip yellow; wings and tail greenish brown, legs brownish, but above the tibia reddish.

THE GAULDINS are species of the heron tribe, which are familiar to the inhabitants of British Guiana, being seen constantly about the trenches and mudflats, where they sometimes collect in great numbers, feeding on fish, snails, etc. They are sometimes shot and eaten, but have a disagreeable fishy taste. There are two species of gauldin, the white and the grey, which are respectively known as the "*Ardea alba*" and "*Ardea ririscens*." They are pretty looking birds when watched feeding on the beach, but have a heavy awkward flight

THE DIVERS OR DARTERS (*Plotus*), are allied to the cormorants, but are easily recognised by their long snake-like necks and small head, with slender, straight, and pointed bill, serrated at the edges. There are several species in this colony. One species, called the black-bellied darter (*Plotus curinaensis*), is found up the rivers; it is often met with in pairs. Its plumage is black and white; it is an excellent diver, and is called by the Indians "yawiwa" and "orauh."

Another species of darter (*Plotus aninga*) is also found in similar places to the other, alone, in pairs, or in small companies. Its plumage is black, but the female and young ones are of a lighter colour, generally greyish brown. It is a very timid bird; if alarmed it stretches its long neck out, and gazes about, and if the cause of danger appears imminent, it plunges into the water and dives for several minutes, preferring this mode of escape to flying, at which it is not very apt.

An allied species (*Colymbus dominicus*) is found in small societies in the marshes and savannas about the coasts. The female builds her nest of grass and sedges, and lays two eggs.

THE WILD DUCKS of this country are numerous, and of various kinds; they are to be found throughout the colony, but abound especially in swampy places. The most common are the vicissi, or vis-si duck, the muscovy, and the common duck.

THE VICISSI DUCKS (*Anas arborea vel dendrocyana viduata*) fly about in flocks of twenty or more, and are frequently seen even in the neighbourhood of town. The plumage is striking and very beautiful, especially when the birds are on the wing. The head is reddish; the forehead pale; the breast of a deep vinous red; the wings white, green, and black; the legs are somewhat long, and the feet are so constructed as to enable them to perch on trees, where they build their nests. They have a peculiar whistling cry, "vicissi," or "vis-si." They are easily domesticated, and associate readily with the other breed of ducks; when any of their number is wounded, the rest of the flock fly around their injured comrade, and by their sympathising cries seem to urge to flight. The tamed ones sometimes used to decoy their wilder brethren; by their cry they attract the latter to settle down in the water, where they became an easy prey to the sportsman; they are excellent eating. Upon one occasion a labourer to my knowledge shot upwards of a dozen with a single barrel, but he only secured seven out of the number: a large flock had alighted on a decayed tree close to the water, and when the fatal shot arrived among them some twelve or more fluttered about *hors de combat* in the water; the wounded ones escaped by diving. These birds destroy guinea corn and other grain. There are several species of this vicissi duck.

THE WILD MUSCOVY (*Carina vel anas moschata*) is larger than the vicissi or vis-si, and is of less gaudy plumage, being of a brownish black colour. I have never seen them in large flocks, but generally three or four are together; they alight on the loftiest trees, where their large bodies and outstretched necks present a singular sight. They build their nests on high trees, and when the young ones are sufficiently grown, the parents carry

“them gently down to the swampy spots to begin their education. Whilst travelling up the creeks, I have frequently seen these tempting birds perched on the branches of trees, but as they generally choose very swampy ground with high grass that are not easily approached with the gun. This bird (*Anas rei carina moschata*) is also called here the musk duck from its peculiar smell, the plumage varies, some being glossed blue or green, the head is slightly tufted, and the legs and feet are reddish. The eggs are of a greenish hue. The Macusis call them “mairva,” and Warraus “omuch.”

Our chapter on the Birds of British Guiana would indeed be incomplete, were the following description by WATERTON omitted. This celebrated naturalist and traveller in his pleasant “Wanderings” thus begins his account of the Birds of the Colony with

THE HUMMING BIRD.—³ ‘Though least in size, the glittering mantle of the Humming-bird entitles it to the first place in the list of the birds of the new world. It may truly be called the bird of paradise; and had it existed in the old world, it would have claimed the title instead of the bird which has now the honour to bear it:—see it darting through the air almost as quick as thought!—now it is within a yard of your face!—in an instant gone!—now it flutters from flower to flower to sip the silver dew—it is now a ruby—now a topaz—now an emerald—now all burnished gold! It would be arrogant to pretend to describe this winged gem of nature after BUFFON’s elegant description of it.

Cayenne and Demerara produce the same humming-birds. Perhaps you would wish to know something of their haunts. Chiefly in the months of July and August the tree called Bois Immortel, very common in Demerara, bears abundance of red blossom, which stays on the tree for some weeks; then it is that most of the different species of humming-birds are very plentiful. The wild red sage is also their favourite shrub, and they buzz like bees round the blossom of the Wallaba tree. Indeed, there is scarce a flower in the interior, or on the sea coast, but what receives frequent visits from one or other of the species.

On entering the forests, on the rising land in the interior, the blue and green, the smallest brown, no bigger than the humble bee, with two long feathers in the tail, and the little forked-tail purple-throated humming-birds, glitter before you in ever-changing attitudes. One species alone never shows his beauty to the sun: and were it not for his lovely shining colours, you might almost be tempted to class him with the goat-suckers, on account of his habits. He is the largest of all the humming-birds, and is all red and changing gold green, except the head, which is black. He has two long feathers in the tail, which cross each other, and these have gained him the name of Karabimiti, or Ara humming-bird, from the Indians. You never find him on the seacoast, or where the river is salt, or in the heart of the forest, unless fresh water be there. He keeps close by the side of woody fresh-water rivers, and dark and lonely creeks. He leaves his retreat before sunrise to feed on the insects over the water; he returns to it as soon as the sun’s rays cause a glare of light. He is so stentory all day long, and comes out again for a short time after sunset. He builds

his nest on a twig over the water in the unfrequented creeks; it looks like tanned cow leather.

As you advance towards the mountains of Demerara, other species of humming-birds present themselves before you. It seems to be an erroneous opinion, that the humming-bird lives entirely on honey-dew. Almost every flower of the tropical climates contains insects of one kind or other; now, the humming-bird is most busy about the flowers an hour or two after sunrise, and after a shower of rain, and it is just at this time that the insects come out to the edge of the flower in order that the sun's rays may dry the nocturnal dew and rain which they have received. On opening the stomach of the humming-bird, dead insects are almost always found there. Next to the humming-birds, the

Cotingas

display the gayest plumage. They are of the order of passer, and you number five species betwixt the sea coast and the rock Saba. Perhaps the scarlet cotinga is the richest of the five, and is one of those birds which are found in the deepest recesses of the forest. His crown is flaming red; to this abruptly succeeds a dark shining brown, reaching half way down the back: the remainder of the back, the rump, and tail, the extremity of which is edged with black, are a lively red; the belly is a somewhat lighter red; the breast reddish black; the wings brown. He has no song, is solitary, and utters a monotonous whistle which sounds like "quct." He is fond of the seeds of the *Hitia* tree, and those of the Siloabali and bastard Siloabali trees, which ripen in December, and continue on the trees for above two months. He is found throughout the year in Demerara; still nothing is known of his incubation. The Indians all agree in telling you that they have never seen his nest.

The purple-breasted cotinga has the throat and breast of a deep purple, the wings and tail black, and all the rest of the body a most lovely shining blue.

The purple-throated cotinga has black wings and tail, and every other part a light and glossy blue, save the throat, which is purple.

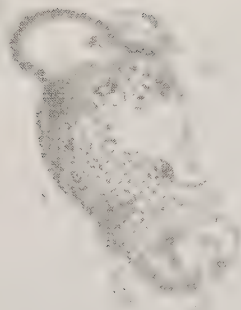
The pompadour cotinga is entirely purple, except his wings, which are white, their four first feathers tipped with brown. The great coverts of the wings are stiff, narrow, and pointed, being shaped quite different from those of any other bird. When you are betwixt this bird and the sun, in his flight, he appears uncommonly brilliant. He makes a hoarse noise, which sounds like "Wallababa." Hence his name amongst the Indians.

None of these three cotingas have a song. They feed on the *Hitia*, Siloabali, and bastard Siloabali seeds, the wild guava, the fig, and other fruit trees of the forest. They are easily shot in these trees during the months of December, January, and February. The greater part of them disappear after this, and probably retire far away to breed. Their nests have never been found in Demerara. The fifth species is the

Campanero or Bell Bird,

called *dara* by the Indians, and bell-bird by the English. He is about the size of the Jay. His plumage is white as snow. On his forehead rises a spiral tube nearly three inches long. It is jet black, dotted all over with small

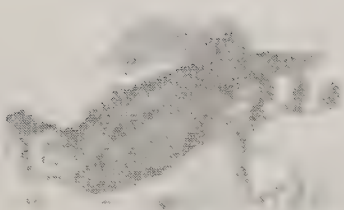
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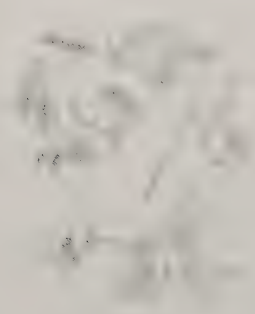
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* white feathers. It has a communication with the palate, and when filled with air, looks like a spire; when empty, it becomes pendulous. His note is loud and clear, like the sound of a bell, and may be heard at the distance of three miles. In the midst of these extensive wilds, generally on the dried top of an aged mora, almost out of gun reach, you will see the campanero. No sound or song from any of the winged inhabitants of the forest, not even the clearly pronounced "Whip-poor-Will," from the goat-sucker, cause such astonishment, as the toll of the campanero.

With many of the feathered race, he pays the common tribute of a morning and an evening song: and even when the meridian sun has shut in silence the mouths of almost the whole of animated nature, the campanero still cheers the forest. You hear his toll, and then a pause for a minute, then another toll, and then a pause again, and then a toll, and again a pause. Then he is silent for six or eight minutes, and then another toll, and so on. Acteon would stop in mid chase, Maria would defer her evening song, and Orpheus himself would drop his lute to listen to him; so sweet, so novel, and romantic is the toll of the pretty snow-white campanero. He is never seen to feed with the other eatingas, nor is it known in what part of Guiana he makes his nest. While the eatingas attract your attention by their superior plumage, the singular form of

The Toucan

makes a lasting impression on your memory. There are three species of toucans in Demerara, and three diminutives, which may be called toucanets. The largest of the first species frequents the mangrove trees on the sea coast. He is never seen in the interior till you reach Maconshia, where he is found in the neighbourhood of the river Tacaton. The other two species are very common. They feed entirely on the fruits of the forest, and though of the pie kind, never kill the young of other birds, or touch carrion. The larger is called Bouradi by the Indians, (which means nose), the other, Seiron. They seem partial to each other's company, and often resort to the same feeding tree, and retire together to the same shady noon-day retreat. They are very noisy in rainy weather at all hours of the day, and in fair weather, at morn and eve. The sound which the Bouradi makes, is like the clear yelping of a puppy dog, and you fancy he says "pia-po-o-co," and thus the South American Spaniards call him Piapoco.

All the toucanets feed on the same trees on which the toucan feeds, and every species of this family of enormous bill, lays its eggs in the hollow trees. They are social but not gregarious. You may sometimes see eight or ten in company, and from this you would suppose they are gregarious; but, upon a closer examination, you will find it has only been a dinner party, which breaks up and disperses towards roosting time.

You will be at a loss to conjecture for what ends nature has overloaded the head of this bird with such an enormous bill. It cannot be for the offensive, as it has no need to wage war with any of the tribes of animated nature; for its food is fruits and seeds, and those are in superabundance throughout the whole year in the regions where the toucan is found. It can

‘ hardly be for the defensive, as the toucan is preyed upon by no bird in South America, and where it obliged to be at war, the texture of the bill is ill adapted to give or receive blows, as you will see in dissecting it. It cannot be for any particular protection to the tongue, as the tongue is a perfect feather.

The flight of the toucan is by jerks; in the action of flying it seems incommoded by this huge disproportioned feature, and the head seems as if bowed down to the earth by it against its will; if the extraordinary form and size of the bill expose the toucan to ridicule, its colours make it amends. Were a specimen of each species of the toucan presented to you, you would pronounce the bill of the bouradi the most rich and beautiful; on the ridge of the upper mandible a broad stripe of most lovely yellow extends from the head to the point; a stripe of the same breadth, though somewhat deeper yellow, falls from it at right angles next the head down to the edge of the mandible; then follows a black stripe, half as broad, falling at right angles from the ridge, and running narrower along the edge to within half an inch of the point. The rest of the mandible is a deep bright red. The lower mandible has no yellow: its black and red are distributed in the same manner as on the upper one, with this difference, that there is black about an inch from the point. The stripe corresponding to the deep yellow stripe on the upper mandible is sky blue. It is worthy of remark that all these brilliant colours of the bill are to be found in the plumage of the body, and the bare skin round the eye.

All these colours, except the blue, are inherent in the horn; that part which appears blue is in reality transparent white, and receives its colour from a thin piece of blue skin inside. This superb bill fades in death, and in three or four days' time, has quite lost its original colours.

The Houtou

ranks high in beauty amongst the birds of Demerara; his whole body is green, with a bluish cast in the wings and tail; his crown, which he erects at pleasure, consists of black in the centre, surrounded with lovely blue of two different shades: he has a triangular black spot, edged with blue, behind the eye, extending to the ear; and on his breast a sable tuft, consisting of nine feathers edged also with blue. This bird seems to suppose that its beauty can be increased by trimming the tail, which undergoes the same operation as our hair in a barber's shop, only with this difference, that it uses its own beak, which is serrated, in lieu of a pair of scissors: as soon as his tail is full grown, he begins about an inch from the extremity of the two longest feathers in it, and cuts away the web on both sides of the shaft, making a gap about an inch long: both male and female adonise their tails in this manner, which gives them a remarkable appearance amongst all other birds. While we consider the tail of the houtou blemished and defective, were he to come amongst us, he would probably consider our heads cropped and bald, in no better light. He who wishes to observe this handsome bird in his native haunts, must be in the forest at the morning's dawn. The houtou shuns the society of man: the plantations and cultivated parts are too much disturbed to engage it to settle there;

“the thick and gloomy forests are the places preferred by the solitary honton. In those far-extending wilds, above daybreak, you hear him articulate, in a distinct and mournful tone, “Honton, honton.” Move cautious on to where the sound proceeds from, and you will see him sitting in the under-wood, about a couple of yards from the ground, his tail moving up and down every time he articulates “honton.” He lives on insects and the berries amongst the underwood, and very rarely is seen in the lofty trees, except the bastard Siloaballi-tree, the fruit of which is grateful to him. He makes no nest, but rears his young in a hole in the sand, generally on the side of a hill.

While in quest of the honton, you will now and then find in with

The Jay of Guiana,

called by the Indians Ibibiron. Its forehead is black, the rest of the head white; the throat and breast like the English magpie: about an inch of the extremity of the tail is white, the other part of it, together with the back and wings, a greyish changing purple; the belly is white: there are generally six or eight of them in company; they are shy and garrulous, and tarry a very short time in one place: they are never seen in the cultivated parts.

Through the whole extent of the forest, chiefly from sunrise till nine o'clock in the morning, you hear a sound of “wow, wow, wow, wow.” This is the bird called

Boclora

by the Indians. It is smaller than the common pigeon, and seems, in some measure, to partake of its nature; its head and breast are blue; the back and rump somewhat resemble the colour on the peacock's neck; its belly is a bright yellow; the legs are so very small that it always appears as if sitting on the branch; it is as ill adapted for walking as the swallow; its neck, far above an inch all round, is quite bare of feathers; but this deficiency is not seen, for it always sits with its head drawn in upon its shoulder; it sometimes feeds with the cotingas on the guava and litia trees; but its chief nutriment seems to be insects, and, like most birds which follow this prey, its claws are well armed with bristles: it is found in Demerara at all times of the year, and makes a nest resembling that of the stork dove. This bird never takes long flights, and when it crosses a river or creek it goes by long jerks.

The boclora is very unsuspicious, appearing quite heedless of danger: the report of a gun within twenty yards will not cause it to leave the branch on which it is sitting, and you may often approach it so near as almost to touch it with the end of your bow. Perhaps there is no bird known whose feathers are so slightly fixed to the skin as those of the boclora. After shooting it, if it touch a branch in its descent, or if it drop on hard ground, whole heaps of feathers fall off: on this account it is extremely hard to procure a specimen for preservation. As soon as the skin is dry in the preserved specimen, the feathers become as well fixed as those in any other bird.

³ Another species, larger than the boclora, attracts much of your notice in these wilds; it is called

Cuia

by the Indians, from the sound of its voice; its habits are the same as those of the boclora, but its colours different; its head, breast, back, and rump are a shining, changing green; its tail not quite so bright; a black bar runs across the tail towards the extremity, and the outside feathers are partly white as in the boclora; its belly is entirely vermilion, a bar of white separating it from the green on the breast.

There are diminutives of both these birds; they have the same habits, with a somewhat different plumage, and about half the size. Arrayed from head to tail in a robe of richest sable hue, the bird called

Rice-Bird

loves spots cultivated by the hand of man. The woodcutter's house on the hills in the interior, and the planter's habitation on the sea coast, equally attract this songless species of the order of Pie, provided the Indian corn be ripe there. He is nearly of the jackdaw's size, and makes his nest far away from the haunts of men; he may truly be called a blackbird: independent of his plumage, his beak, inside and out, his legs, his toes, and claws are jet black.

Mankind, by clearing the ground, and sowing a variety of seeds, induces many kinds of birds to leave their native haunts, and come and settle near him: their little depredations on his seeds and fruits prove that it is the property, and not the proprietor, which has the attractions. One bird, however, in Demerara is not actuated by selfish motives; this is

The Cassique;

in size, he is larger than the starling; he courts the society of man, but disdains to live by his labours. When nature calls for support, he repairs to the neighbouring forest, and there partakes of the store of fruits and seeds, which she has produced in abundance for her aerial tribes. When his repast is over, he returns to man, and pays the little tribute which he owes him for his protection; he takes his station on a tree close to his house; and there, for hours together, pours forth a succession of imitative notes. His own song is sweet, but very short. If a Toucan be yelping in the neighbourhood, he drops it, and imitates him. Then he will amuse his protector with the cries of the different species of the woodpecker; and when the sheep bleat, he will distinctly answer them. Then comes his own song again, and if a puppy dog, or a Guinea fowl interrupt him, he takes them off admirably, and by his different gestures during the time, you would conclude that he enjoys the sport.

The Cassique is gregarious, and imitates any sound he hears with such exactness, that he goes by no other name than that of Mocking bird amongst the colonists.

At breeding time, a number of these pretty choristers resort to a tree near the planter's house, and from its outside branches weave their pendulous nests. So conscious do they seem that they never give offence, and so little suspicious are they of receiving any injury from man, that they will

“ choose a tree within forty yards from his house, and occupy the branches so low down, that he may peep into the nests. A tree in Waratilla Creek affords a proof of this.

The proportions of the Cassique are so fine, that he may be said to be a model of symmetrical in ornithology. On each wing he has a bright yellow spot, and his rump, belly, and half the tail, are of the same colour. All the rest of the body is black. His beak is the colour of sulphur, but it fades in death, and requires the same operation as the bill of the toucan to make it keep its colours. Up the rivers, in the interior, there is another cassique, nearly the same size, and of the same habits, though not gifted with its powers of imitation. Except in breeding time, you will see hundreds of them retiring to roost, amongst the moea-moea-trees and low shrubs on the banks of the Demerara after you pass the first island. They are not common on the sea coast. The rump of this cassique is a flaming scarlet. All the rest of the body is a rich glossy black. His bill is sulphur colour. You may often see numbers of this species weaving their pendulous nests on one side of a tree, while numbers of the other species are busy in forming theirs on the opposite side of the same tree. Though such near neighbours, the females are never observed to kick up a row, or come to blows!

Another species of cassique, as large as a crow, is very common in the plantations. In the morning, he generally repairs to a large tree, and there with his tail spread over his back, and shaking his lowered wings, he produces notes, which though they cannot be said to amount to a song, still have something very sweet and pleasing in them. He makes his nest in the same form as the other cassiques. It is about four feet long; and when you pass under the tree, which often contains fifty or sixty of them, you cannot help stopping to admire them as they wave to and fro, the sport of every storm and breeze. The rump is chestnut: ten feathers of the tail are a fine yellow, the remaining two, which are the middle ones, are black and an inch shorter than the others. His bill is sulphur colour: all the rest of the body black, with here and there shades of brown. He has five or six long narrow black feathers on the back of his head, which he erects at pleasure.

There is one more species of cassique in Demerara, which always prefers the forests to the cultivated parts. His economy is the same as that of the other cassiques. He is rather smaller than the last described bird. His body is greenish, and his tail and rump paler than those of the former. Half of his beak is red.

You would not be long in the forests of Demerara, without noticing

The Woodpeckers.

You meet with them feeding at all hours of the day. Well may they do so. Were they to follow the example of most of the other birds, and only feed in the morning and evening, they would be often on short allowance, for they sometimes have to labour three or four hours at the tree before they get to their food. The sound which the largest kind makes in hammering against the bark of the tree, is so loud, that you would never suppose it to proceed from the efforts of a bird. You would take it

“to be the woodman with his axe, trying by a sturdy blow, often repeated, whether the tree were sound or not. There are fourteen species here; the largest the size of a magpie, the smallest no bigger than the wren. They are all beautiful; and the greater part of them have their heads ornamented with a fine crest, moveable at pleasure.

It is said, if you once give a dog a bad name, whether innocent or guilty, he never loses it. It stick close to him wherever he goes. He has many a kick, and many a blow to bear on account of it; and there is nobody to stand up for him. The Woodpecker is little better off. The proprietors of woods, in Europe, have long accused him of injuring their timber, by boring holes in it, and letting in the water, which soon rots it. The colonists in America have the same complaint against him. Had he the power of speech, which Ovid's birds possessed in days of yore, he could soon make a defence. “Mighty lord of the woods,” he would say to man, “why do you wrongfully accuse me? Why do you hunt me up and down to death, for an imaginary offence? I have never spoiled a leaf of your property, much less your wood. Your merciless shot strikes me, at the very time I am doing you a service. But your shortsightedness will not let you see it, or your pride is above examining closely the actions of so insignificant a little bird as I am. If there be that spark of feeling in your breast which they say man possesses, or ought to possess, above all other animals, do a poor injured creature a little kindness, and watch me in your woods only for one day. I never wound your healthy trees. I should perish for want in the attempt. The sound bark would easily resist the force of my bill, and were I even to pierce through it there would be nothing inside that I could fancy or my stomach digest. I often visit them it is true, but a knock or two convince me that I must go elsewhere for support; and were you to listen attentively to the sound which my bill causes, you would know whether I am upon a healthy or an unhealthy tree. Wood and bark are not my food. I live entirely upon the insects which have already formed a lodgement in the distempered tree. When the sound informs me that my prey is there, I labour for hours together, till I get at it; and by consuming it for my own support, I prevent its further depredations in that part. Thus I discover for you your hidden and unsuspected foe, which has been devouring your wood in such secrecy, that you had not the least suspicion it was there. The hole which I make in order to get at the pernicious vermin, will be seen by you as you pass under the tree. I leave it as a signal to tell you, that your tree has already stood too long. It is past its prime. Millions of insects, engendered by disease, are preying upon its vitals. Ere long it will fall a log in useless ruins. Warned by this loss, cut down the rest in time, and spare, O spare, the unoffending Woodpecker.” In the rivers, and different creeks, you number six species of

The King-Fisher.

They make their nest in a hole in the sand on the side of the bank. As there is always plenty of foliage to protect them from the heat of the sun, they feed at all hours of the day. Though their plumage is prettily varied, still it falls far short of the brilliancy displayed by the

* English king-fisher. This little native of Britain would outweigh them altogether in the scale of beauty. A bird called

Jacamar

is often taken for a king-fisher, but it has no relationship to that tribe; it frequently sits in the trees over the water, and as its beak bears some resemblance to that of the king-fisher, this may probably account for its being taken for one: it feeds entirely upon insects; it sits on a branch in motionless expectation, and as soon as a fly, butterfly, or moth pass by, it darts at it, and returns to the branch it had just left. It seems an indolent, sedentary bird, shunning the society of all others in the forest. It never visits the plantations, but is found at all times of the year in the woods. There are four species of Jacamar in Demerara; they are all beautiful; the largest, rich and superb in the extreme. Its plumage is of so fine a changing blue and golden green, that it may be ranked with the choicest of the humming-birds. Nature has denied it a song but given a costly garment in lieu of it. The smallest species of Jacamar is very common in the dry savannas. The second size, all golden green on the back, must be looked for in the Wallaba forest. The third is found throughout the whole extent of these wilds; and the fourth, which is the largest, frequents the interior, where you begin to perceive stones in the ground. When you have penetrated far into Maconsdia, you hear the pretty songster, called

Troupiale

pour forth a variety of sweet and plaintive notes. This is the bird which the Portuguese call the nightingale of Guiana; its predominant colours are rich orange, and shining black, arrayed to great advantage: his delicate and well-shaped frame seems unable to bear captivity. The Indians sometimes bring down Troupiales to Georgetown, but in a few months they languish and die in a cage. They soon become very familiar; and if you allow them the liberty of the house, they live longer than in a cage, and appear in better spirits; but, when you least expect it, they drop down and die in epilepsy.

Smaller in size, and of colour not so rich, and somewhat differently arranged, another species of Troupiale sings melodiously in Demerara. The woodcutter is particularly favoured by him; for while the hen is sitting on her nest, built in the roof of the woodcutter's house, he sings for hours together close by: he prefers the forests to the cultivated parts.

You would not grudge to stop for a few minutes, as you are walking in the plantations, to observe a third species of Troupiale: his wings, tail, and throat are black, all the rest of the body is a bright yellow. There is something very sweet and plaintive in his song, though much shorter than that of the Troupiale in the interior.

A fourth species goes in flocks from place to place in the cultivated parts at the time the Indian corn is ripe; he is all black, except the head and throat, which are yellow: his attempt at song is not worth attending to.

^{3c} Wherever there is a wild fig-tree ripe, a numerous species of birds, called—

Tangara,

is sure to be on it. There are eighteen beautiful species here. Their plumage is very rich and diversified; some of them boast six separate colours; others have the blue, purple green, and black so kindly blended into each other, that it would be impossible to mark their boundaries; while others again exhibit them strong, distinct, and abrupt: many of these Tangaras have a fine song. They seem to partake much of the nature of our linnets, sparrows, and finches. Some of them are fond of the plantations; others are never seen there, preferring the wild seeds of the forest to the choicest fruits planted by the hand of man.

On the same fig-trees to which they repair, and often accidentally up and down the forest, you fall in with four species of

Manikin.

The largest is white and black, with the feathers on the throat remarkably long: the next in size is half red and half black: the third black, with a white crown: the fourth, black, with a golden crown, and red feathers at the knee. The half red and half black species is the scarcest. There is a creek in the Demerara called Camouni. About ten minutes from the mouth, you see a common-sized fig-tree on your right-hand, as you ascend, hanging over the water; it bears a very small fig twice a year. When its fruit is ripe, this Manikin is on the tree from morn till eve. On all the ripe fig-trees in the forest you see the bird called the small

Tiger-bird.

Like some of our belles and dandies, it has a gaudy vest to veil an ill-shaped body: the throat, and part of the head, are a bright red; the breast and belly have black spots on a yellow ground; the wings are a dark green, black, and white; and the rump and tail black and green. Like the Manikin it has no song: it depends solely upon a showy garment for admiration. Devoid too of song, and in a still superber garb,

The Yawaraciri

comes to feed on the same tree. It has a bar like black velvet from the eyes to the beak; its legs are yellow; its throat, wings, and tail black; all the rest of the body a charming blue. Chiefly in the dry savannas, and here and there accidentally in the forest, you see a songless Yawaraciri still lovelier than the last: his crown is whitish blue, arrayed like a coat of mail; his tail is black, his wings black and yellow; legs red; and the whole body a glossy blue. Whilst roving through the forest, ever and anon you see individuals of the wren species, busy amongst the fallen leaves, or seeking insects at the roots of the trees.

Here, too, you find six or seven species of small birds, whose backs appear to be overloaded with silky plumage. One of these, with a chestnut breast, smoke-coloured back, tail red, white feathers like horns on his head, and white, narrow-pointed feathers under the jaw, feeds entirely upon ants. When a nest of large, light, brown ants emigrates, one following the other

' in meandering lines above a mile long, you see this bird watching them, and every now and then picking them up. When they disappear, he is seen no more: perhaps this is the only kind of ant he is fond of: when these ants are stirring, you are sure to find him near them. You cannot well mistake the Ants after you have once been in its company, for its sting is very severe, and you can hardly shoot the bird, and pick it up, without having five or six upon you.

Parrots and Parroquets

are very numerous here, and of many different kinds. You will know when they are near you in the forest, not only by the noise they make, but also by the fruits and seeds which they let fall while they are feeding.

The Hia-hin Parrot,

called in England the parrot of the sun, is very remarkable: he can erect at pleasure a fine radiated circle of tartan feathers quite round the back of his head from jaw to jaw. The fore part of his head is white; his back, tail, and wings, green; and his breast and belly tartan. Superior in size and beauty to every parrot of South America,

The Ara

will force you to take your eyes from the rest of animated nature, and gaze at him: his commanding strength, the flaming scarlet of his body, the lovely variety of red, yellow, blue, and green in his wings, the extraordinary length of his scarlet and blue tail, seem all to join and demand for him the title of emperor of all the parrots. He is scarce in Demerara till you reach the confines of the Maoushi country; there he is in vast abundance; he mostly feeds on trees of the palm species. When the Concarite trees have ripe fruit on them, they are covered with this magnificent parrot: he is not shy or wary; you may take your blow-pipe and quiver of poisoned arrows, and kill more than you are able to carry back to your hut. They are very vociferous, and, like the common parrots, rise up in bodies towards sunset, and fly two and two to their place of rest. It is a grand sight in ornithology to see thousands of Aras flying over your head, low enough to let you have a full view of their flaming mantle. The Indians find their flesh very good, and the feathers serve for ornaments in their head-dresses. They breed in the holes of trees, are easily reared and tamed, and learn to speak pretty distinctly.

Another species frequents the low lands of Demerara. He is nearly the size of the scarlet ara, but much inferior in plumage. Blue and yellow are his predominant colours. Along the creeks and river sides, and in wet savannas, six species of the

Bittern

will engage your attention. They are all handsome. The smallest not so large as the English water-hen. In the savannas too, you will sometimes surprise

The Snow-White Egrette,

whose back is adorned with the plumes from which it takes its name. Here too, the spur-winged water-hen, the blue and green water-hen, and two other species of ordinary plumage are found. While in quest of these, the

"blue Heron", the large and small brown heron, the boatbill, and muscovy duck, now and then rise up before you. When the sun has sunk in the western woods, no longer agitated by the breeze; when you can only see a straggler or two of the feathered tribe hastening to join its mate, already at its roosting place, then it is that

The Goatsucker

comes out of the forest, where it has sat all day long in slumbering ease, unmindful of the gay and busy scenes around it. Its eyes are too delicately formed to bear the light, and thus it is forced to shun the flaming face of day, and wait in patience till night invites him to partake of the pleasures her dusky presence brings. The harmless, unoffending goatsucker, from the time of Aristotle down to the present day, has been in disgrace with man. Father has handed down to son, and author to author that this nocturnal thief subsists by milking the flocks. Poor injured little bird of night, how sadly has thou suffered, and how foul a stain has inattention to facts put upon thy character! Thou has never robbed man of any part of his property, nor deprived the kid of a drop of milk.

When the moon shines bright, you may have a fair opportunity of examining the goatsucker. You will see it close by the cows, goats, and sheep, jumping up every now and then, under their bellies. Approach a little nearer—he is not shy, "he fears no danger, for he knows no sin." See how the nocturnal flies are tormenting the herd, and with what dexterity he springs up and catches them, as fast as they alight on the belly, legs, and udder of the animals. Observe how quiet they stand, and how sensible they seem of his good offices, for they neither strike at him, nor hit him with their tail, nor tread on him, nor try to drive him away as an uncivil intruder. Were you to dissect him, and inspect his stomach, you would find no milk there. It is full of the flies which have been annoying the herd.

The prettily mottled plumage of the goatsucker, like that of the owl, wants the lustre which is observed in the feathers of the birds of the day. This, at once marks him as a lover of the pale moon's nightly beams. There are nine species here. The largest appears nearly the size of the English wood owl. Its cry is so remarkable, that having once heard it you will never forget it. When night reigns over these immeasurable wilds, whilst lying in your hammock, you will hear this goatsucker lamenting like one in deep distress. A stranger would never conceive it to be the cry of a bird. He would say it was the departing voice of a midnight murdered victim, or the last wailing of Niobe for her poor children, before she was turned into stone. Suppose yourself in hopeless sorrow, begin with a high loud note, and pronounce, "ha, ha, ha, ha, ha, ha, ha," each note lower and lower, till the last is scarcely heard, pausing a moment or two betwixt every note, and you will have some idea of the moaning of the largest goatsucker in America.

Four other species of goatsucker articulate some words so distinctly, that they have received their names from the sentences they utter, and absolutely bewilder the stranger on his arrival in these parts. The most common

'one sits down close by your door, and flies, and alights three or four yards before you, as you walk along the road, crying, "Who-are-yon, who-who-are-yon." Another bids you, "Work-away, work-work-work-away." A third cries, mournfully, "Willy-come-go, Willy-Willy-Willy-come-go." And high up in the country, a fourth tells you to "Whip-poor-Will. Whip-whip-whip-poor-Will." You will never persuade the negro to destroy these birds, or get the Indian to let fly his arrow at them. They are birds of omen, and reverential dread. Jumbo, the demon of Africa, has them under his command; and they equally obey the Yabahou, or Demerara Indian devil. They are the receptacles for departed souls, who come back again to earth, unable to rest for crimes done in their days of nature; or they are expressly sent by Jumbo, or Yabahou, to haunt cruel and hard-hearted masters, and retaliate injuries received from them. If the largest goatsucker chance to cry near the white man's door, sorrow and grief will soon be inside; and they expect to see the master waste away with a slow consuming sickness. If it be heard close to the negro's or Indian's hut, from that night misfortune sits brooding over it; and they await the event in terrible suspense.

Would you wish to pursue the different species of game, well stored and boundless is your range in Demerara. Here no one dogs you, and afterwards clandestinely inquires if you have a hundred a year in land to entitle you to enjoy such patrician sport. Here no saucy intruder asks if you have taken out a license, by virtue of which you are allowed to kill the birds which have bred upon your own property. He

"You are as free as when God first made you;
 Ere the vile laws of servitude he
 And wild in woods the noble boy."

Before the morning's dawn you hear a noise in the forest, which sounds like "thuraquana" often repeated. This is

The Partridge.

a little smaller, and differing somewhat in colour from the English partridge: it lives entirely in the forest, and probably the young brood very soon leave their parents, as you never flush more than two birds in the same place, and in general only one. About the same hour, and sometimes even at midnight, you hear two species of

Mam or Tinamon

send forth their long and plaintive whistle from the depth of the forest. The flesh of both is delicious. The largest is plumper, and almost equals in size the black cock of Northumberland. The quail is said to be here, though rare.

The Hannaquai,

which some have compared to the pheasant, though with little reason, is very common. Here are also two species of

The Powise or Hocco,

and two of the small wild turkies, called maroudi; they feed on the ripe fruit of the forest, and are found in all directions in these extensive wilds. You will admire the horned screamer as a stately and majestic bird: he is almost the size of the turkey cock; on his head is a long slender horn,

³ and each wing is armed with a strong, sharp, triangular spur, an inch long. Sometimes you will fall in with flocks of two or three hundred

Urucabas or Trumpeters,

called so from the singular noise they produce. Their breast is adorned with beautiful changing blue and purple feathers; their head and neck like velvet; their wings and back grey, and belly black. They run with great swiftness and when domesticated, attend their master in his walks, with as much apparent affection as his dog. They have no spurs, but still, such is their high spirit and activity, that they browbeat every dunghill fowl in the yard, and force the Guinea birds, dogs, and turkies to own their superiority.

If, kind and gentle reader, thou should ever visit these regions with an intention to examine their productions, perhaps the few observations contained in these wanderings may be of service to thee: excuse their brevity; more could have been written, and each bird more particularly described, but it would have been pressing too hard upon thy time and patience.

Soon after arriving in these parts, thou wilt find that the species here enumerated are only as a handful from a well-stored granary. Nothing has been said of the eagles, the falcons, the hawks, and shrikes; nothing of the different species of vultures, the king of which is very handsome, and seems to be the only bird which claims regal honours from a surrounding tribe. It is a fact beyond all dispute, that when the scent of carrion has drawn together hundreds of the common vultures, they all retire from the carcase as soon as the king of the vultures makes his appearance. When his majesty has satisfied the cravings of his royal stomach with the choicest bits from the most stinking and corrupted parts, he generally retires to a neighbouring tree, and then the common vultures return in crowds to gobble down his leavings. The Indians, as well as the whites, have observed this; for when one of them, who has learned a little English, sees the king, and wishes you to have a proper notion of the bird, he says "There is the governor of the carrion crows."

Now, the Indians have never heard of a personage in Demerara higher than that of governor; and the colonists, through a common mistake, call the vultures carrion crows. Hence the Indian, in order to express the dominion of this bird over the common vultures, tells you he is governor of the carrion crows. The Spaniards have also observed it, for, through all the Spanish Main, he is called *Rey de Zamuros*, King of the Vultures. The many species of owls, too, have not been noticed; and no mention made of the Columbine tribe. The prodigious variety of water fowl, on the sea shore, has been but barely hinted at.

There, and on the borders and surface of the inland waters, in the marshes and creeks, besides the flamingos, scarlet curlews, and spoonbills, already mentioned, will be found; greenish-brown curlews, sandpipers, rails, coots, gulls, pelicans, Jabirus, Nandapoons, crabiers, snipes, plovers, ducks, geese, cranes, and Anhingas; most of them in vast abundance; some frequenting only the sea coast, others only the interior, according to their different natures; all worthy the attention of the naturalist, all worthy of a place in the cabinet of the curious. Should thy comprehensive genius

'not confine itself' to birds alone, grand is the appearance of other objects all around. Thou art in a land rich in botany and mineralogy, rich in zoology and entomology. Animation will glow in thy looks, and exercise will brace thy frame in vigour. The very time of thy absence from the tables of heterogeneous luxury will be profitable to thy stomach, perhaps already sorely drenched with *Londo-Parisian* sauces, and a new stock of health will bring thee an appetite to relish the wholesome food of the chase. Never-failing sleep will await on thee at the time she comes to soothe the rest of animal nature; and, ere the sun's rays appear on the horizon, thou wilt spring from thy hammock fresh as the April lark. Be convinced also, that the dangers and difficulties which are generally supposed to accompany the traveller in his journey through distant regions, are not half so numerous or dreadful as they are commonly thought to be.

The youth, who incautiously reels into the lobby of Drury-lane, after leaving the table sacred to the god of wine, is exposed to more certain ruin, sickness, and decay, than he who wanders a whole year in the wilds of *Demerara*. But this will never be believed; because the disasters arising from dissipation are so common and frequent in civilized life, that man becomes quite habituated to them; and so gradually sinks into the tomb long before their time, without ever once taking alarm at the causes which precipitated them headlong into it. But the dangers which a traveller exposes himself in foreign parts are novel, out of the way things to a man at home. The remotest apprehension of meeting a tremendous tiger, of being carried off by flying dragon, or having his bone picked by a famished cannibal; oh, that makes him shudder. It sounds in his ears like the bursting of a bomb-shell. Thank heaven, he is safe by his own fireside.

Prudence and resolution ought to be the travellers's constant companions. The first will cause him to avoid a number of snares which he will find in the path as he journeys on; and the second will always lend a hand to assist him, if he has unavoidably got entangled in them. The little distinctions which have been shown at his own home, ought to be forgotten when he travels over the world at large; for strangers know nothing of his former merits, and it is necessary that they should witness them before they pay him the tribute which he was wont to receive within his own doors. Thus, to be kind and affable to those we meet, to mix in their amusements, to pay a compliment or two to their manners and customs, to respect their elders, to give a little to their distressed and needy, and to feel, as it were, at home amongst them, is the sure way to enable you to pass merrily on, and to find other comforts as sweet and palatable as those which you were accustomed to partake of amongst your friends and acquaintance in your own native land. We will now ascend in fancy on *Icarian* wing, and take a view of *Guiana* in general. See an immense plain! betwixt two of the largest rivers in the world, level as a bowling-green, save at *Cayenne*, and covered with trees along the coast quite to the Atlantic wave, except where the plantations make a little vacancy amongst the foliage.

Though nearly in the centre of the torrid zone, the sun's rays are not so intolerable as might be imagined, on account of the perpetual verdure

and refreshing north-east breeze. See what numbers of broad and rapid rivers intersect it in their journey to the ocean, and that not a stone or a pebble is to be found on their banks, or in any part of the country till your eye catches the hills in the interior. How beautiful and magnificent are the lakes in the heart of the forests, and how charming the forests themselves, for miles after miles on each side of the rivers! How extensive appear the savannas or natural meadows, teeming with innumerable herds of cattle, where the Portuguese and Spaniards are settled, but desert as Saara, where the English and Dutch claim dominion! How gradually the face of the country rises! See the sand-hills all clothed in wood first emerging from the level, then hills a little higher, rugged with bold and craggy rocks, peeping out from amongst the most luxuriant timber. Then come plains, and dells, and far-extending vallies, arrayed in richest foliage: and beyond them, mountains piled on mountains, some bearing prodigious forests, others of bleak and barren aspect. Thus your eye wanders on, over scenes of varied loveliness and grandeur, till it rests on the stupendous pinnacles of the long-continued Cordilleras de los Andes, which rise in towering majesty, and command all America.

How fertile must the low-lands be, from the accumulation of fallen leaves and trees for centuries! How propitious the swamps and slimy beds of the rivers, heated by a downward sun, to the amazing growth of alligators, serpents, and innumerable insects! How inviting the forests to the feathered tribes, where you see buds, blossoms, green and ripe fruit, full grown and fading leaves, all on the same tree! How secure the wild beasts may rove in endless mazes! Perhaps those mountains too, which appear so bleak and naked, as if quite neglected, are, like Potosi, full of precious metals.²

² WATKINSON.

CHAPTER IX.

THE ANIMAL KINGDOM—(*Concluded*)—*Fishes*.—Canoes—Curials and methods of capturing Fish by the Indian Tribes—The Law Law—Dawalla—Bashaw—Pacoona—Gilbague—Cartabar and Morocoto—Paen—Piri—Sun Fish—Haimura—Mullet—Hassar—Flounders—Electric Eel—Yaenta—Snapper—Sting Ray—Jew Fish—Snook—Saw Fish—Snake Fish—Shark, etc.

THE Fishes of this Colony have been very fully described by Sir R. H. SCHOMBURGK, and published in the Naturalists' Library. The same author, as an introduction to his Natural History of the Fishes of Guiana, has given an interesting account of the mode of fishing adopted by the Indian tribes, with their manner of manœuvring their canoes upon fishing expeditions, &c. Extracts from the above mentioned work are now given and form principally the subject of the present chapter:—

"How I delight in recalling the scenes and adventures of our exploring tours in Guiana! I still recollect, when starting on our first expedition, we approached the embouchure of the majestic Essequibo, forming at its mouth an estuary nearly twenty miles wide, and divided into four channels by three islands. Numerous other islands follow on ascending, until the last traces of cultivation are passed, and we see its banks lined by primitive forests, only here and there interrupted by a solitary cottage. From the margin of the water, as far as the low land permits the survey of the shores, on either side, extends an immense forest. We ascended in a schooner, as far as the confluence of the Mazaruni with the Essequibo, where we made the necessary preparation for our further journey. The canoes which were selected for that purpose are manufactured by the Indians, and consist of the trunk of a huge tree, which has been hollowed out, partly by the axe, partly by the fire. They are sometimes from thirty to forty feet long, and are peculiarly qualified for these rivers, as they draw but little water and are less subjected to leaking when drawn over cataracts or coming in contact with rocks, than if they were constructed of timbers. A covering of palm leaves is substituted for an awning. As the largest of these canoes is seldom more than four feet wide, its load must be restricted, and the baggage is generally placed in such a manner that, arrived where a cataract opposes obstacles to further progress, it may be unloaded and carried over land. The Indian propels his canoe by paddles; these are generally about five feet long, of which the blade occupies about two feet. The Caribs and Macusis prepare their paddles generally of the *yururi* or *massara*, a very curious tree, which has the appearance of being fluted, or as if it consisted of numerous slender trees all grown together at the centre; the flat or tubular projections of the lower part of the trunk qualify them peculiarly for their construction,

² besides which, the wood is light, elastic, and very strong. I have frequently seen the Indians split one of the flutes off, and finish a paddle in course of a few hours, having no other tool but a cutlass and a common spear-knife; it was then handed to the women, who painted it with *rucu** and *lana*, the former of which colours red, the latter black.

The Indian sits or squats on the thwart of the canoe, fronting or looking towards the bow, and grasping the handle with his right hand: if he sits on the larboard side, he puts the left just a little above the blade of the paddle, strikes outward into the water, and having pulled forward, gives the blade a slight turn, so as to present the edge, and prevent unnecessary splashing when he withdraws it in order to repeat the former movement. There is no rudder to steer by, but the Indian who acts as coxswain has a paddle of larger dimensions, and, taking his seat at the stern, he directs the course of the boat with as much agility as if the canoe possessed one of the common rudders.

Their mode of paddling is various: if it be on a long intended journey, a long and strong stroke is required; but if perhaps only a short distance is to be made, or on approaching a settlement, the stroke is varied; and keeping a certain time, the handle is knocked against the side of the canoe at each stroke, sometimes twice slow and thrice in double quick time. A European, unacquainted with their mode of paddling, is awkward, and it sure to draw their ridicule upon himself, by knocking the fingers of the hand which is near the blade against the canoe; but an Indian paddles with grace, and his arm forms a fine arch, showing what sinews he possesses.

The canoe is flat on the bow and stern, and in order to prevent the water from getting into it, two pieces of wood cut according to its shape are fitted in, which the Indian never fails to ornament according to his fashion.

The *corial* narrows to a point towards the stern and bow. Like the canoes, they are scooped out from the trunk of a tree, and have no keel,—which indeed would be quite a superfluous appendage, as it would be soon knocked off by coming in contact with sunken rocks, or when drawn over cataracts.

The *pakasse*, or woodskin, is a boat merely constructed of the bark of a tree. It is generally made of a single piece of the tough bark of the *murianara* tree, which grows to a very large size. An incision of the length the boat is to possess is made in the bark, which is removed from the trunk by driving in wedges; when loosened from the wood, it is kept open by cross sticks, and is supported at the extremities upon two beams, in order to raise those parts of the intended boat. Vertical incisions, at about two feet apart, and a few inches in depth, are then made, and the parts secured afterwards by overlapping. It remains for several days exposed to the weather before it is fit for use. Though the *pakasse* is so crank that the slightest motion, when once in, renders it liable to upset, I have seen *pakasses* among the Tarumas, in the Cuyawini, with five or six Indians in them. Their great advantage is, that being flat, they can float, where a common corial

² SCHOMBURGK'S Natural History of the Fishes of Guiana.

* It is produced from the red pulp which covers the seeds of the *Bixa orellana*; perhaps better known in England by the name of *annatto*, where it is much used for dyeing cheese. The *lana* is the fruit of *Genipa Americana*, the juice of which gives a fine black dye.

² of the smallest description cannot pass : and are so light, that in crossing cataracts, one man can easily carry his boat on his head. When propelled by one man, he squats in the middle and paddles on either side. Great care is requisite in stepping in or out of them, as, if upset, they sink almost instantly, owing to the great specific gravity of the peculiar bark of which they are built.

When we ascended the river Berbice, two Waccawai boys belonged to our party, who navigated one of those pakasses. They were perhaps not more than eight years old, but we were highly delighted to see how ably they managed it. The boat seemed to fly through the water : and the juvenile steersman directed its course with such judgment and precision, that it never grounded, though it went over places where there was not more than eight or nine inches water. They were equally expert in the use of the bow and arrow : and wherever they observed one of the finny tribe, the pakasse was halted, the bow strung, off flew the pointed arrow, and when taken out of the sand, which the water barely covered, we generally observed a fish struggling for liberty. In spite of these occasional detentions, they were always in the van when the hour approached for our stopping for breakfast or to encamp for the night.

The first impediments which are thrown in the navigation, on ascending the Essequibo, are the Aritaka Rapids, distant about sixty miles in a direct line from the mouth of the river. They are the beginning of a series which extends for six miles, caused by the river's passage through a chain of hills about two hundred feet high. The most considerable of them is the Itaballi Rapid, and the manner in which these impediments are overcome is as follows. If we except the larger cataracts, where the mass of water falls over a level ledge, and to overcome which the canoes must be drawn overland, large blocks generally divide the river, through which it forces itself a passage by numerous fissures, sometimes merely a few feet in breadth, in other instances from fifty to sixty and upwards. At the base of the blocks which form these rapids there is generally an eddy, where the canoe is almost stationary, having no current either way. The head of the canoe, after a long hawser has been fixed round her bow, is brought to the stream, and the most interpid and best swimmers of the crew now attempt to reach the next rock, either by wading, a courageous leap, or by swimming ; when successful, the canoe or corial is pulled into one of the shoots of the fall where there is water enough to float her, and by main strength she is hauled up the ascent, the steersman (sometimes lashed for security's sake to his seat) attempting to direct her course as far as in his power by his large paddle. Safely arrived at the head of the rapid, she is taken out of the current, and her stern laid against the top of the rock with her head up the stream ; the crew instantaneously spring into her, and paddling with all their strength, they endeavour to cross the current of the succeeding rapid, until they get into another eddy. It is evident, should the rope break in hauling her over the ascent, or if the crew are not active in jumping into the canoe when lying against the rock, and should not be strong enough to pull against the current, the head of the canoe is turned, and she drifts broadside down the

² Schomburgk's Natural History of the River Essequibo.

² 'fall, where she must infallibly upset, should she even escape the danger of the rocks, where otherwise she would be dashed to pieces.

The hauling of canoes over rapids affords a most enlivening scene; the activity of the Indians is only in such instances brought in perfect play. Here we see a party attempting to swim towards one of the rocks which are partly raised above the surface of the river, while others are wading alongside the canoe up to their waists in water. Their cheerful cry when yielding to force, she stems the current and is drawn by means of the rope towards the rock where the Indians are standing, is a peculiar feature of the scene attending the passing of a rapid, and the roar of the water, and the wild grandeur of the surrounding scenery, assist to make the picture impressive.

Where the nature of the cataracts permits it, the canoe in descending the river is let down by ropes, to avoid its being dashed to pieces. But this is frequently impracticable, and then her safety depends entirely upon the steersman and the bowman acting in concert and with decision. In descending, the canoe is generally kept in the centre and force of the stream, and, carried forward, she shoots along with the swiftness of lightning; she arrives at the edge of the cataract, and, balancing for a moment, she plunges headlong into the surge below, dashing the spray on either side against the rocks that bound the passage, so as almost completely to conceal the body of the canoe, leaving the men only visible above the spray; then she rises again above the foaming waters, obeys the steady hand of the helmsman, and skipping over the waves formed by the fall and impetuosity of contending currents, the danger is over, and a simultaneous burst of joy generally escapes from the canoeemen, to proclaim their success.

Alas! success does not always attend the descent of these falls, and large is the number of those who have lost their lives in descending the cataracts by the canoe having been upset or split on coming in contact with a hidden rock. I had thus the grief to witness, during our descent of the river Berbice, the upsetting of one of our canoes, while passing one of the Christmas cataracts, and of her inmates, thirteen in number, Mr. REISS, a talented young man, who accompanied me as volunteer, lost his life by this disastrous accident.

South of the first series of rapids, the Essequibo assumes a new prospect, displaying numerous sandbanks rising above its surface, which obliged us constantly to cross and re-cross to avoid running aground. The *guana* (*Lacerta iguana*) had selected them as a deposit for its eggs, which when fresh are a great delicacy. Our Indian canoeemen showed great dexterity in securing them, and in a very short time they took some hundred eggs and captured several of the *guanas*.

We frequently selected these sand-banks for our night-camp, and our attempts in fishing were here generally more successful than when we camped on the wooded banks of the river. Every one of our canoeemen knew his duty: scarcely had the boat touched the selected spot, when all was life and bustle; some were seen running to cut the necessary poles for pitching the tent; others unloaded the utensils wanted for our night-quarters and

² See SCHOMBURGK'S Natural History of the Fishes of Guiana.

² for that important personage the cook, whose indispensable qualities and skill are only fully acknowledged, when, after a long day's journey, the minutes appear hours to the murmuring stomach which can scarcely brook delay. The gun on the shoulder, the hunters dive into the thick woods, attracted by the noise of the cooing *paris* (*Craa alberti*), or a herd of monkeys. The smaller crafts are unloaded, and some of the more skilful archers paddle away from the noisy camp to see whether they are fortunate enough to shoot, with bow and arrow, some *lagunani* or other fish.

Fires are seen in all directions, with the simmering earthen pot or *ainu* on them, and the squaw watching with anxiety the bubbles which commence to rise on the surface of the water. This contained a gnuau; the other, part of a monkey; a third, some fish; but all seasoned with capsicum, the indispensable condiment of the Indian's cookery. The tents are now finished; if the weather promises fair, the Indian satisfies himself with putting a few poles in the ground, from which he suspends his hammocks; but if it threaten to rain, and palus or the gigantic leaves of the wild plantain (*parania*) are in the vicinity, then he constructs, in an incredibly short time, a hut which proves impervious to the rain. Some of these huts are square or oblong, others arched, and below it he slings his hammock. Our hut did not differ much in construction, only in place of the roof of palm-leaves we used a curtain of sail-cloth. In the course of an hour our camp was in order, and offered the appearance of a little village. Meanwhile the fishermen and hunters returned, and brought frequently an accession to our approaching dinner, which, after all, was best seasoned by a good appetite.

During night commenced the fishing for *lanlan* and others of the family of *siluridae*. After the hooks have been baited with fish or animal flesh, they are carried out into the stream, the line to which they are attached being about thirty to forty fathoms long. If the Indian feels inclined, he keeps the end on the land in his hand; but frequently he takes a forked stick, which he drives into the ground, and after having tied some dry bushes to the fork, he leads the stray line over it. If a fish should bite, the line being drawn with rapidity over the dry leaves, makes a rustling noise, and the Indian hurries to seize it and to haul the fish in. If it be a *lanlan* (*silurus*) or a large *pacarnima* (*Phractocephalus lenticolus*), some considerable skill is necessary to land the fish without breaking the line or the hook. Many of the *siluridae* issue a sound when taken out of the water, but few so loud and so continued as the *pacarnima*. I have somewhere else observed, that the Indians have always a bludgeon at hand with which they beat the thickly armed skull, and each blow is sure to produce the loud grinding sound; so that we who were lying in our hammocks knew whether a *lanlan*, *pacarnima*, or any other fish had been secured.

The Indian considers that a large fire kindled at the water's edge is sure to attract such fishes as take the bait only during night, and they never fail therefore to have a fire or a large brand when they are fishing for *lanlaus* or *pacarnimas*.

If large blocks of granite impeded the river near our camp, all hand-

² lines which could be spared or procured were set in requisition to fish for *pirais* (*serrasalmo*). The avidity with which they take the bait insured success to the least practised in the art of fishing, and if the place proved a haunt of the *pirai*, the Indian was sure to secure his dinner. The natives possess great art in throwing the handline from the shore into the stream; and it is a pretty sight to see the line circling in the air and descending on the water at a great distance from the banks or the rock which the angler has selected for his stand. The Indians use likewise, for the purpose of catching the *pirai* and numerous other species of that family, the rod, line, and hook. The rod is generally made of *yari-yari* or lance-wood (a species *anonaceæ*), which, in consequence of its toughness and elasticity, is peculiarly fit for that purpose. It demands, however, considerable skill to draw the fish out of the water, as of all others the *pirai* possesses tenacity of life and considerable strength for its size, and inflicts, besides this, very formidable wounds with its triangular teeth. A bludgeon is always at hand to kill the fish before it is unhooked. If the Indian has been successful enough to secure as many as he thinks he requires for his dinner, some tough slender twig is taken, and one end being put through the gill aperture and then out at the mouth, they are thus strung and carried to the camp.

The Indians are a nation of ichthyophagists, they possess therefore various methods of securing fish, but the most wonderful is the skill which they possess of shooting them with bow and arrow. If we recollect that proper allowance must be made for the false reflection of objects under the surface of the water, and the resistance which the arrow meets, it is really wonderful to see the success which attends this mode of fishing. The sharpness of the sight of the Indian is equally surprising: when the fish is comparatively at ease or rest, I have not been able to see it under the surface of the water, although the Indians pointed it out, and no doubt ridiculed my stupidity in not being able to observe it: but the Indian not only sees the fish when in quick motion, but shoots it likewise with his arrow; making, therefore, just allowance for the false reflection, its progress while discharging the arrow, and the resistance which the latter meets when entering the water. The arrow remaining a moment in a perpendicular position, and then vanishing, is a proof that his aim has been correct, and that the fish is of considerable size, to sink with the arrow in its body. However, it lasts not long before it is obliged to make its appearance again on the surface. If the fish is very powerful, this is the opportunity to discharge a second arrow into its body, and even a third or fourth if its size demands it. I have seen an *arapama* or *pira-rucu* (*Sudis gigas*) with upwards of twenty in its body before it could be secured.

The bow of the Indian is generally from five to six feet in length, and is made of hard and elastic wood, which is rounded below and slightly concave above; in this we have to admire his ingenuity; if it were perfectly round above, the woody fibres of the bow, when bent, would split. The string is made of silk grass (the fibres of *Bromelia karata*), and is equal in durability to our best bowstrings. There is sometimes a difference in the form of these bows, which indicates the tribe by whom they are made. The

² 'most serviceable of the Indians of Guiana are made of wamara, a tree which belongs to the natural family of *lecythideæ*; and for ornament, they likewise choose the latter, or snake-wood, no doubt one of the costliest ornamental woods which Guiana possesses.

The most common arrow which the Indian uses for shooting fish, is the takusi or poya. The shaft of the arrow is from five to five and a half feet long, and is made of the upper part of the stem of a reed (*gynerium*) which is very common throughout Guiana. A piece of lance-wood or yuri-yari, of about twelve inches in length, is firmly fixed to it, which is armed with an iron point consisting of two pieces, namely, the pointed one to inflict the wound with, and a second being bent backward, as a barb or counter-hook. They are fixed with curanya or curawatu, the fibres of the bromelia above alluded to, and are well coated with curan or nani, a mixture of resin and bees-wax. Through the frequent intercourse which the Indians have with the coast, iron is in no great scarcity; nevertheless, where it is not at their command, they use monkey bones instead, and among the savage tribes, where iron is a precious article, the greater part of the arrow-points are made of monkey bones.

A peculiar arrow is used for shooting the delicious fish called pacu. They are stronger than the generality of arrows, and are nearly six feet in length. They are called puya by the Caribs and Macensis, and their lower part is not feathered. A long string is attached to the arrow's point, which detaches itself from the shaft. The end of the long string is kept round the little finger of the left hand when the arrow is shot off; and if the fish be struck, the shaft detaches itself, and the fish is hauled in. The line is sometimes plaited the length of the arrow, and the string attached to a kind of noose. Of a similar construction is the sarra-raeca or utléwacca. The iron point is slightly fixed and attached to a long string, which is neatly wound up round the upper shaft of the arrow; when the fish is struck, it darts into the deep, and the point having detached itself, the line runs off rapidly, while the arrow which swims on the surface points out the situation where the fish is, and the Indian goes in chase with his canoe. This kind of arrow is likewise used for shooting fresh-water turtle, which are sometimes of an enormous size; nevertheless, the force with which the arrow is discharged causes the point to penetrate through the shell. It is only to be wondered at how so large an animal can be secured with so thin a string as that which is attached to the iron point; but I believe, in their skill in landing a large fish or hauling in a turtle, they would not yield to the best angler in England.

The samoro is an arrow of peculiar construction, and three wounds are at once inflicted by it. It is used for striking the larger fishes which frequent the rivers of Guiana.

These are the arrows which are generally in use for shooting fish, but various are the ways used to entrap the funny tribe. An ingenious method to secure fish, without much trouble, is by means of spring-hooks. The Indians take an elastic and tough stick, of the thickness of a finger, to the thinner end of which a hook is attached, when the other end is driven in

the bank of the river, or perhaps tied to the branch or root of a tree under water; just somewhat below the surface of the water, a notch is made in the stick, and a similar notch at the thinner end where the hook is attached. The stick is now bent, and by means of the two notches it is kept in that situation, the hook and bait being a little under the water; but scarcely is it touched by the fish, in his eagerness to seize the seducing morsel, when it is not only hooked, but, in consequence of the jerk, the notches part from each other, and the fish is drawn by the elasticity of the rod out of its element, and there it hangs until it is secured by the fisherman.

After we had passed by the Christmas cataracts of the river Berbice, our ill success in securing game would have left us in want, if we had not been indemnified by a large number of fish; and I recollect that our canoe-men caught, in one night, fourteen large haimuras (*erythrinus*) by means of spring-hooks. If the fish is very weighty, and the elasticity of the rod or stick not in comparison, the fish is only partly drawn out, and in its attempts to disentangle itself, it struggles and lashes the water, and this is a sign for the fisherman to secure the captive; or the noise attracts the wily cayman, always on the alert to seize some prey, which is soon in attendance, and snaps at the entrapped fish carrying away hook and line. In this piratical system he is assisted by the pirai or huma, who slashes piece after piece from the poor captive, and when the tardy fisherman takes his round, he finds nothing but the head attached to the rod. Those who set the hooks must therefore be constantly on the alert.

In the vicinity of their villages, the Indians frequently plant numerous poles along the bank of the river, where it is shallow; these are about ten feet apart, and a line is drawn from one to the other and secured. To this line, which frequently consists merely of a liana, numerous smaller ones are tied, each of which has a baited hook at its end, and thus the Indian, provided he attends to his hooks, has a better chance of securing fish. If a large fish takes the bait, the consequence is that it tears the line, and he not only loses the fish, but likewise a number of hooks.

The Indian employs likewise different shaped baskets, which are made of thin twigs, or of a reed rather flat and held asunder by hoops; some are cylindrical, others conical, with an opening at both ends; and small sharpened sticks are placed, funnel-shaped, in such a manner that they point inwards, to allow the fish to get in but not out again.

We observed, in the Rio Negro, numerous contrivances at the mouth of small rivers, to secure fish on a similar plan, but on a larger scale. The mouth of the stream is barricaded with high poles. One part fronts the current, and there is a narrow entrance, which in a winding manner opens in the reservoir entirely shut in with poles. The fish coming down the river easily enters the *cambou*, but, as in the former instance, it cannot find its way out again. The poles of which it consists being of considerable height, it serves equally well when the river is swollen; it is entered from behind; and there is frequently a kind of grating at half of the whole height of the *cambou*, to prevent the fish from sinking in the deep, if the river stands very high. We observed here likewise numerous

weirs, called *cacuri*, which resembled those which are employed for taking the sturgeon in the Havel and other rivers of Germany.

A peculiar feature of the rivers of Guiana are large inlets, which no doubt have been formed by the river changing its course. These inlets (*kira-hagh* or *itabú*) are narrow at their mouth, but expand considerably when once entered, and are entirely currentless. They are the favourite abode of many fishes, and consequently the haunts of alligators, caymans, and numerous aquatic birds which prey on the finny tribe. The magoari or American stork (*Ciconia Americana*), the jabiru (*Mycteria Americana*), the hanura (*Ardea cocoi*), the roseate spoonbills (*Platalea rosea*), the boatbill (*Cokeroma cochlearia*), the pereca (*Carbo Brasiliensis*), the American darter (*Plates Americanus*), and numerous others, frequent these inlets in search of food.

The Indians, with their families, undertake large fishing expeditions to those which they know to be well stocked with fish; and after their outlets have been partly barricaded, they erect their temporary huts and commence fishing with the line or with bows and arrows. If they are successful, a small triangular or square stage is erected. Should a lanlan have been caught, then a square and large barbacot is sure to be erected, and the Indian, always willing to spare himself trouble where he can, seeks until he finds two trees which are just apart enough to serve in lieu of poles.

The women have been meanwhile occupied in collecting dry wood; and after the fish has been washed and cleaned, and cut in pieces if it be a large one, it is put upon the grating and the wood lighted below it. The smoke acts as pyroligneous acid upon the fish; and this method is more effectual than if the fish had been simply moistened with the acid, as it combines the complete exsiccation of the animal substance with the effect of the pyroligneous acid. The fish thus prepared keeps for several days; nay, if it be well smoked, for weeks. Meat of feathered or other game is smoked in the same manner, and keeps for a longer period. The smoking ought to be, however, repeated after a certain lapse of time.

But the most effective mode of fishing is to poison the water with *hai-ari*, the root of a leguminous plant (*louchocarpus*), a climber, with a bluish papilionaceous flower. The root is about three inches in diameter, and contains a white gummy milk of an acrid taste. After a sufficient quantity of hai-ari root has been collected, and the spot in the river has been fixed upon, a large space is inclosed. If it be among the falls where the paen has its haunts, the ledges of the rocks frequently afford opportunity of lightening the labour of inclosing a spot above where the *treis* is in abundance, and which plant constitutes the favourite food of that fish. By means of a wall of loose stone, and hurdles made of light wood, the remainder of the barrier is accomplished; two or three spaces are generally left open, for which likewise hurdles are prepared, but which are not closed until they intend to commence to poison the water. These openings are, lastly, closed with daybreak: but previously the hai-ari has been prepared. They beat it upon the rocks with heavy sticks until it is in shreds; and a corial or canoe having been filled with water, they pour the hai-ari and

turn it about, until the water has a milky whiteness. If the canoe is not too large, it is now carried to the spot which has been inclosed, and the infusion is thrown at different spots into it. The first symptoms that the poison has taken effect are observable in about ten or fifteen minutes; the fish rise to the surface, commence to swim unsteady, jump out of the water, and attempt to pass the stone-walls and hurdles; ultimately, they gasp violently for air, the gill-covers remain open, and turning the belly upwards, they die. As soon as the poison has taken proper effect, the fish may be secured with the hand, or they are shot with the arrow. The fish thus killed are by no means deteriorated in quality, and the number which are caught is enormous. In the Brazil, as at the Rio Negro, this mode of fishing is interdicted under a penalty of two hundred *mil reis*, but it is not strictly kept, nor is the fine enforced.

I estimated the quantity of fish which I saw taken in the Upper Demerara river, during one of those fishing expeditions, at fifty hundred weight. Mr. HILLHOUSE relates, that in less than an hour he has taken two hundred and seventy pacu, averaging seven pounds weight, with one hundred weight of other fish.

I have seen frequently a peculiar mode of fishing practised among the Indians, when at the period that the water in the rivers fell after the inundation, large pools of water had collected on the savannahs or on the islands. As soon as it was discovered that the pool contained fish, then young and old set to with calabashes, pots, and whatever would serve the purpose, to empty the pool of its water.

The Rio Negro was, at the end of March 1839, on so low a level, that many of its tributaries ceased to flow, and consequently the deeper parts of the bed of the river formed pools. These pools, in the river Anapara, were so stocked with fish, that we rushed with cutlasses into the water and waged war against the finny tribe on a novel method. The number we secured by cutting them in pieces was astonishing.

Among the Aréuna Indians I observed a kind of net which they called *penté*, with which they secured a number of smaller fish, perhaps three to four inches in length, which bury themselves in holes in the banks of rivers. The Indian knocks with the net at the hole, and the alarmed fish rushes out into the net. This is the only instance in which I saw the Indians of the interior make use of a net.

We are too little acquainted with the habits of fishes in general, and even with the modes and periods of propagation of those which inhabit Europe; it is therefore, not to be expected, that I, during the comparative short period which I spent in the interior of Guiana, should have become acquainted with what has remained in many instances a riddle to the investigating eye of European philosophers for centuries. The general belief among the Indians is, that at the period when the annual rains cause the rivers to overflow and inundate the low countries, the fish ascend to those inlets which the rivers form in their upper parts, and where the water is currentless; here they are said to deposit their spawn. An old Maensi cheiftain at Pirara informed me that even the pacu deposited its eggs in

“those still waters. It is a singular fact, that the fry of the paco is entirely unknown at the lower regions of the rivers, where the adults feed in numbers on the *lakis* or *waia* and other similar water plants. Mr. HILLHOUSE, who so frequently visited the interior, observes, in his “Voyage up the Massaroony,” —“I have caught, by poisoning the waters, upwards of one thousand pacou, and the fry of other kinds of fish to a finger's length; but in all this wholesale destruction, I have never seen a pacou less than a foot long.”* There is no doubt that the fish does not descend the rivers till of a sufficient age and strength to venture among the turbulent waters at the cataracts, where its favourite food, the *waia* is growing.

A species of fish, which belong to the same division as the *callichthys*, namely the *Doras Hancockii* of Cuvier and Valenciennes, possesses the singular property, as we are told already by MARGRAVE of his *Tamouta*, of travelling over land. I have been informed by eye-witnesses, that they have met sometimes whole droves during the dry season, when those pools of water which had remained from the last inundation were about to dry up. They then march over land in search of water, and the shield with which their body is armed, as well as the strong spring-ray of their pectoral fins, serve to help them forward. It is thought that “they have the power of retaining a portion of water in a membranaceous bag surrounding the gills, which keeps the filamentous structure moist, and enables the animal to continue the respiratory action.”† So numerous are those droves, that the negroes have filled sometimes whole baskets during the terrestrial excursions of the doras in search of their natural element.

Fish are generally accused of having no attachments for their offspring; they neither construct a nest, nor do they feed or defend their young. There are, however, exceptions, and among these belongs the fish which is known at the coast of Guiana under the name of *hassar* or *hardback* (*Callichthys subulatus*‡), which constructs a regular nest of blades of grass and leaves, in holes just above the surface of the water, where it deposits its roe and watches it with maternal care until the fry is brought forth. Somewhere else I have related the maternal care which the lan-lan and other species of *siluride* show for their young offspring, which swim in shoals about them, and in case of danger enter the large throat of the mother.§ These are only single instances; the far greater number, when once brought into external life, are left to themselves, and perish, devoured by larger fish reptiles, or aquatic birds; and if the survivors should live to increase in size, their safety is endangered for the rest of their life. It is not only man, who for economical purposes pursues the fishes which inhabit the mighty rivers of

* SCHOMBURGK'S Natural History of the Fishes of Guiana.

† Journal of the Royal Geographical Society, vol. iv. p. 33.

‡ Fish Naturalist's Library, Ichthyology, vol. i. p. 72.

§ I believe that Hancock's *Callichthys bitoralis* or Valenciennes's *C. subulatus*, and Margrave's *Tamouta*, are nearer related than suspected. I am not aware that the *Doras* in the interior built any nests, and refer therefore only to the *Callichthys* at the coast regions or brackish waters.

§ I extract from some manuscript notes of Dr. Hancock's, formerly a resident in Demerara and which only lately have been lent to me, the following confirmation of the above:—A large *Gilbhakra* (a species of salt water *silurus*) just taken out of the water, was seen by Mr. Gibbs, and many others, at the King's Stabling, to vomit up vast numbers of the young fry, of the same species, he thinks three or four hundred, each the length of a finger. The fish had been chased up and taken in shoal water. Some time since had been observed of another mother species of *silurus*.

¹ 'Guiana, various are their other enemies, which for the purpose of satisfying their appetites wage war on the finny tribe. They themselves, the most voracious and insatiable of the animal creation, assist in their mutual destruction.

The large alligators and caymans are the foremost among the inhabitants of the water which prey upon the fishes. There they lie, like dry logs of wood, at the foot of some cataract, their mouth half open, ready to snatch and swallow what the increased rapidity of the current should carry down the fall. How frequently have we seen them in that situation while ascending the upper river Berbice, which beyond all others seemed to swarm with these horrid monsters. I have already observed how often they tore the fish from our spring-hooks, and carried fish, hook, and line away; and we naturally did not owe them good-will for their stealing propensities, which served as an additional proof to what extent their depredation must be carried on. And although abundance of fish, during certain seasons, prevails in the rivers of the interior, the cayman is nevertheless the most covetous of all animals, and envies every other successful fisher. This he gives to understand, particularly by angry growls, if the line with the captive is drawn in, and his attempts to intercept the captured fish, before it be drawn on the land, should have proved unsuccessful. While we were encamped at the mouth of the river Rewa, or Roiwa, during our last expedition, the afternoon of 21st October had passed under thunder and rain; but at the approach of night, Nature lulled herself to rest, and only the droppings from the leaves told of the former storm. I was lying sleepless in my hammock, and I watched two Indians who had their lines out to entrap some hungry fish. A *kilbagre*, lured away by the tempting bait, had snapped at it, and the fisherman, acquainted by the stress on his line of his success, drew the unwilling fish towards the canoe, when the roar of a cayman awoke the echo of the woods, and rushing towards the canoe with all its might, he recaptured the fish, as the astonished Indians were just on the point of drawing it in, and with it went the hook and a great part of the line. At our second night's camp, after we had entered the river Rupununi, the Indians were likewise fishing, and whenever a fish was caught and drawn towards the canoe, the caymans commenced such a roar that it baffled description. We distinctly heard that there were three; first one commenced when the fish that was drawn in began to struggle, and another answered him, until the noise was so great that the Indians, as if in self-defence, and to intimidate the approaching monsters, set up a shout themselves. Indeed, the roaring of the cayman is so strong, that in the still hour of night it may be heard a mile off,—and there is something awful and indescribable in it; it is not the tiger's growl, the bull's bellowing, the lion's roar; it is different from all, and really terrific, when that sound bursts suddenly upon the ear. I might compare it to the snorting of a frightened horse, if the strength of that snort could be increased ten,—no, twenty-fold, in effect.

The otters of Guiana, of which there are two species, are more destructive to the fishes than the European and Canadian otters to the finny

2. SCHOMBERG'S Natural History of the Fishes of Guiana.

² tribes of their rivers. As constant summer prevails in Guiana, their depredations continue the whole year : while, during the period when the rivers of the colder zones are frozen over, the otters there are obliged to feed on terrestrial animals. Old Izaak Walton would have found, therefore, additional reasons to bestow hard names upon those "villanous vermin." Every rock in the vicinity of their residence bears the mark of their excrements; and their feeding-places are so devoid of vegetation, if we except the larger bushes and trees, that they cannot be mistaken, even if the number of scales and fish bones did not point out their success and frequency of their visits. A complete path leads up from the water's edge to these places, which, in consequence of their ascending and descending in single file, is hollowed out. The smaller species of otter hunt in packs of eight or ten, and they swim mostly against the stream; the larger, seldom more than two together. As they dive to a great distance, and are able to remain under the water for six or eight minutes, what fish passes over them at that time are sure to fall a prey to their voracity; they seize them at once by the belly and drag them on shore, where they are frequently deposited while they continue their pursuit. The Indians, who are aware of this, watch their success in ambush, and secure what the otters have brought ashore. The *arapaima* or *pirarucu*, the largest fresh-water fish of those regions, is not safe from their attacks; and I have been informed by the Indians, that this giant of the rivers is sometimes attacked by the otters *en masse*; so much I know from personal observations, that they secure *haimaras* (*Erythrinus*) from ten to twelve pounds in weight.

Even the jaguar, the tiger of the new world, is ranged among the depredators upon the fishes; and as every Indian will inform the inquirer, his attempts to take fish prove successful. He may be seen frequently prowling on sand banks or along the low banks of rivers, and as the fish approach the shallows, he dexterously knocks them out of the water with his paw; but, that in order to entice them to the surface, he drops some of his saliva on the water, is no doubt an assertion which wants confirmation. I have been astonished at the feats of strength which a jaguar displayed in one of his fishing depredations. While we were sojourning at Curassawaka, a settlement of Caribs on the Rupununi, we were much annoyed by a jaguar which prowled almost nightly about the settlement. One evening the Indians, who had been out fishing returned with a large arapaima or pirarucu (*Sudis gigas*). As it was late, and the fish weighed not less than two hundred pounds, we deferred conveying it on land until next morning. When morning came, no fish was to be found in the canoe; but there were sufficient traces to show that it had been dragged by the jaguar into the wood, where we found it *minus* its tail part, which to a third of the fish's length had been eaten off. It may be conceived what strength was necessary to get it out of the canoe; and I am almost inclined to think that it had been assisted by another jaguar.

How numerous are the enemies which the fish possess amongst the winged tribe of Guiana! If we consider their number, from the pygmist of the kingfishers, scarcely the size of a sparrow, to the stately jabiru,*

² Schomburgk's Natural History of the Plants of Guiana.
* *Mycteria Americana*.

* which with his neck erect stands upwards of six feet high, it may be easily imagined how many perils the finny tribe have to undergo, and that perhaps scarce one in a thousand of those which are excluded from the egg dies of old age.

Look at the *hanura* (*Ardea coccyz*), alike distinguished, like its European prototype the heron, for cowardice, indolence, and insatiable hunger. There he sits on yonder tree, which partly overhangs that broad expanse of water, named a *kirahagh* or *itabru* by the Indians, his long neck sunk between the shoulders, and his whole figure bespeaking leanness, though gorged with prey, as if there were not abundance for his support. But let the call of hunger remind him that exertions are wanted to satisfy his unnatural appetite, and we soon see him upon the wing or wading solitary along the shallow waters, until he finds opportunity to dart with unerring aim upon his prey; or he awaits patiently the smaller fry, which, driven into shallow water, have only escaped the danger which the larger species of their own kind threatened them, in order to be devoured by the voracious bird.

Numerous are the different species of bitterns and smaller herons which aid in committing devastation among the fishes: they are assisted by the roseate spoon-bill, the boat-bill,* and, of all others, by the cormorants and the darters, or *carara*.† The latter are worthy companions of the *hanura*; alike indolent and voracious, they share in all its depredatory habits, having moreover the advantage that they can fall on their prey in the deep. The *carara*, as well as the cormorant, is an excellent diver; the peculiar formation of the nasal organs of the former qualify it particularly to remain for a length of time under water.

Large flocks of gulls chiefly that strange species the *darradarra* or razer-bill,‡ frequent the inland rivers, and although the peculiar formation of their bill gives to them an awkward appearance, scarcely are they on the wing when they show their agility, and soaring over the water, slightly dipping their wings in that element, they are skilled enough to stay the smaller fish in its gambols, and carry it away an easy prey.

Frequently resounds the gloomy forest from the piercing cry of the fishing eagle, which, soaring in circles high above the water, darts with the swiftness of an arrow upon the fish which played on the surface of the river. He who would make himself acquainted with the numerous enemies which the fish possess among the feathered tribe, ought to be present when the waters, in one of those inlets or *kirahags*, are poisoned with the *hai-ari* plant. Scarcely commence the torpid qualities of the plants to operate upon the fish, which, penned in, cannot escape its pernicious influence, and snapping for air, show themselves on the surface, when the environs already resound from the shrill cry of numerous gulls, which not minding the presence of man, dart between them upon the helpless fish, and seem equally intent upon their destruction. The trees are occupied by herons, *magnaris*,§ darters, and *perekas*,|| which only await the absence of man to assist in the work of destruction. The king of the vultures* and his sable

2. SEYMOURIN'S Natural History of the Fishes of Guiana.

* *Platanus ajaja*, *Coccyz* ma, *Cochlearia*.

† *Carbo Brasiliensis*, *Picus Americanus*.

§ *Cincozia Americana*

‡ *Rhynchops melanura*.

* *Sarcophagus papa*.

'attendants,* in anticipation of the approaching feast, when those fishes which were neglected to be taken up by the Indians or aquatic birds should have acquired the necessary gain, sit around in solemn silence, and their head withdrawn in the ruff, their wings partly drooping, they convey the very picture of gloomy scavengers. But if I were to judge from a living specimen which had been entrapped in an adult state, and which I possessed for several weeks while in the interior of Guiana, I would not be astonished to see the king of vultures, when hard pressed by hunger, regaling itself on fresh fish. The individual to which I allude never declined to eat the fish which was thrown in a fresh state before him; for that purpose, he kept his food with talons, and spread his wings, picking the flesh from the bones if the fish was large, but swallowing it entire if of a small size.†

We thus close the long list of enemies which the tiny tribe of the mighty rivers of Guiana possesses; but if we consider the extraordinary fecundity of fish, it is not to be wondered at that there is still such an abundance as to afford nourishment to man, in whose sustenance the whole creation has been made subservient.

Such of the Guiana fresh-water fishes as might prove of economical use to mankind are exceedingly numerous. The many noble streams of these fertile regions are in general stocked with fish, although at present they profit only a few. At the period that the inundations subside, and the granite dykes which cross the rivers of the interior are no more covered by the waters, parties of men proceed from the lower Essequibo to these dykes in order to procure the fish called *pacu*, which are caught in large numbers, slightly salted, and dried on the rocks, and sold in the colony at about a shilling each; however, I do not think that fifteen hundred are brought at present to the coast. The *morocoto* or *osibu*, a species which belongs to the same division of fishes as the *pacu*, frequenting only the estuaries of rivers, chiefly those of the Orinoco and the adjacent streams, while the *pacu* belongs exclusively to the fresh-water rivers where the tide has no influence, is likewise much prized as an excellent article of food, both when fresh or salted, and large numbers of them are occasionally brought to Georgetown. If the fisheries were carried on in a more active way, and not as a pastime, or merely on a tour of pleasure to give some change to a monotonous and indolent life, it would not only become productive of considerable benefits to those who embark in it, but open another resource of the colony, which at present lies entirely neglected. Of great importance is the fact, that there exists in the Rupununi one of the largest fresh-water fishes, namely,

The Arapaima or Pirarucu

which attains occasionally a length of twelve feet, and weighs upwards of three hundred pounds. It is used fresh and salted, and affords the means of subsistence to a large number of inhabitants on the Rio Negro and the Amazon, which it likewise inhabits. Were the fishing-ground on the Rupununi attended to during the dry season, an abundance of that fish might be obtained for internal consumption and occasional traffic with the coast regions.

* See note 2. See also 111.

† See note 2. See also 111.

The Lau-lau

"reaches nearly the size of the arapaima, and it belongs to a division of fishes, the air-bladder of which is used with the same advantage as that of the sturgeon, in lieu of isinglass, it might be collected in sufficient abundance; besides that, its flesh is considered excellent.

"The Lau-Law is, next to the pirarucu (*Sudis gigas*), the largest fresh-water fish of the rivers of Guiana. Although it has been sometimes secured near the mouth of rivers which fall into the sea, it is nevertheless my belief that it has been carried thither by accident, and belongs properly to the inland rivers. They sometimes attain the length of ten or twelve feet and the weight of two hundred pounds, and their flesh is so much esteemed, that it is considered to be one of the ties which binds him who has once tasted it, for ever to the region where it is indigenous. It is smooth, of a greenish black, and silvery white near the belly; mouth and fins yellow, behind the latter somewhat reddish. The head is flat and broad, and covered with a strong bony plate which expands to the first dorsal fin. The first ray of the first dorsal and of the pectoral fin is strong and spiny, studded with whitish bony tubercles, and can be depressed or erected at pleasure. Four barbules below, those nearest the mouth smaller, two above; nostrils double, about an inch apart. Eyes small; iris silvery. Intestines with numerous appendices or caeci, otherwise simple. It is remarkable that the young of the lau-lau are excluded from the ovarium into the abdomen, in which state they might be likened to the yolk of an egg, in which the two specks of the eyes, the mouth, and fins, are, however, observable. If a lau-lau should be taken when near parturition, in consequence of fear, the eggs pass off. Mr. HILLHOUSE has assured me that he had repeatedly put the eggs in a glass of water, where they hatched themselves, and the young fish appeared with a large yellow protuberance on its belly, like the abdomen of a chicken just hatched. When left to nature, the eggs are hatched in the abdomen; and the young are excluded, they swim in large shoals over the head of the mother. In case of danger, the mother opens her mouth, and the fry find a safe retreat in the thorax.

"They live chiefly upon other fish, but we have likewise found seeds and vegetables in their stomach. In spite of their unwieldiness, they swim with rapidity, and their strength may be conjectured from their size. They bite rapidly, but if the line be not calculated for this giant among the inhabitants of the rivers of Guiana, it carries off both hook and line. While we ascended the river Parime, we encamped one night at the head of a large cataract, and Sororeng one of the Indians who accompanied me afterwards to London, went late in the evening alone in a canoe, to try whether he could hook some fish. We were all fast asleep, when I was awakened by some person crying out for help, and we soon ascertained that it was Sororeng, who had hooked a lau-lau, and having got entangled in the line, with neither knife nor other sharp instrument at hand, the fish carried him and canoe at a rapid rate towards the cataract. Armed with cutlasses, we soon came to his assistance, and time enough to prevent him from being carried

2. SCHOMBURGK'S *Journal* and *History* of the E. of Guiana.

'down; but so eager was he now to secure his prize, when he saw that assistance was at hand, that he begged us not to cut the line, although it had by this time fairly cut into his hand, but to try to slay the monster, which apparently was more inclined to haul the fisherman than the fisherman the fish. It was slain, and when brought on the land, measured eight feet and a half in length.

This fish, which is very numerous in the upper part of the rivers, might afford sustenance to many, if its fishery were carried on with regularity to a greater or less extent. The lau-lau, as already observed, is delicious, both in the fresh state and when dried; the liver would furnish oil of excellent quality, and we have frequently used the air-bladder, instead of isinglass, for glue.'

The Dawalla or Pina

'is shaped something like a trout, and also in some degree resembles it in taste, not however, possessing the fine flavour of that fish, being dry and insipid.

It grows to the length of thirty resembling the Morocoto in shape, but not so much in demand as food, the taste being rough and strong.'

The Pacoua or Pacouma

'is an ugly-looking fish, from one to two feet in length, found in holes on the mud flats, where the fishermen hook them out at low water. The head is large and flat, frog shaped; they bite severely; they make a kind of grunting noise when captured. This fish is very plentiful at times.

The Gilbagre or Gilbagger

(*Silurus parkerii*), is a large salt-water fish, found plentifully in the estuaries of the rivers of the colony. It is caught from two to five feet in length, and is of a beautiful golden colour. It is purchased very readily by the inhabitants, and when stewed is excellent eating, and has the appearance and taste of veal. A valuable kind of glue, like isinglass, is obtained from the dried natatory bladder, and is much used in the colony. It is also in considerable demand for exportation. It is a voracious fish; one that was caught and opened had the arm of a child in its stomach.'

The Cartabac

'is from fifteen to eighteen inches long; back of a darkish colour; sides light red or orange; belly white; the fins very soft and fleshy, and the whole body covered with small scales. It feeds on fruits, seeds, and insects, and is excellent food, being fat, and containing few bones; the taste somewhat resembles turbot. This fish is peculiarly fond of the seed of the carassu, and is in the highest state of perfection in the month of June, when that seed falls from the trees. The Indians boil the seed, and, enclosing it in a small basket, lower it about two feet in the water, and as the fish appear to devour it, shoot them with arrows.

The Morocoto or Osibu,

usually between two and three feet in length, feeds entirely on herbs and fruits, and is a most delicious fish, equal to the Pacou, or in fact any other natural to the tropics. It is in taste nearer resembling flesh than fish, and eagerly sought after by the epicure.

The Pacou

¹ "is from sixteen to twenty-four inches in length, sub-oval shape, with very small scales, of a silver grey ground colour, beautifully spotted with bright scarlet. It chiefly feeds upon aquatic plants and seeds, and is, when well prepared, quite a delicacy. The Weyra, an aromatic vegetable, eaten by the Pacou and other gregarious fishes, is thus employed by the Indians for the purpose of taking that valuable fish. A part of the falls, where the Weyra grows plentifully, and where shoals of the Pacou are perceived feeding, is enclosed with a wall of loose stones, about a foot above the surface of the water, leaving two narrow spaces for the fish to enter, which, having done, the apertures are speedily and silently closed with long staves and bundles—and the fish are thus confined within a temporary dam or pond. In this manner from 200 to 300 Pacou, weighing, on an average, seven pounds each, and a hundred weight of other fish, are taken at a time. The Pacou are split, salted and dried on the rocks.'

The Pirai or Huma.

² "This most voracious fish is found plentifully in all the rivers in Guiana, and is dreaded by every other inhabitant or visitant of the river. Their jaws are so strong that they are able to bite off a man's finger or toe. They attack fish of ten times their own weight, and devour all but the head. They begin at the caudal fin; and the fish being thus left without the principal organ of motion, is devoured with ease, several going to participate of the meal. Indeed, there is scarcely any animal which they will not attack, man not excepted. Large alligators, which have been wounded on the tail, afford them a fine chance of satisfying their hunger, and even the toes of this formidable animal are not free from their attacks. The feet of ducks and geese, which are kept in the neighbourhood where they are plentiful, are almost invariably cut off, and young ones devoured altogether; and in these places it is not safe to bathe, or even to wash clothes in the river, many cases having occurred of fingers and toes having been cut off by them. They vary in colour from lead-colour to nearly black; the eye is situate near the middle of the head; scaling rather small, smooth at the edge, oval, and adhesive. Lateral line runs near the middle of the body, bending from the top of the opercle. Head and body depressed; ventral fins, under the dorsal, large and strong; nostrils oval, double, situate near the eye; tongue fleshy; lower jaw produced; teeth triangular, serrated, and very sharp—six on each side of upper, and seven in the lower jaw; vent near to the anal fin; gill-cover striated, with smooth edges; gill-rays 4,—are not covered by the gill-lid, but free, and extend from its lower margin towards the throat; the opening semilunar. They live about an hour after being taken out of the water; air-bag is long and double. They are a principal article of food amongst the Indians, and as they are so voracious, they are easily taken by hook and line, which is secured near the hook with a piece of tin to prevent cutting. Their flesh is dry and indifferent, and rather bony. It is, however, a good relish while the Indian is travelling in the rainy season, when other kinds are not to be obtained.'

The Sun Fish or Lucanani

' is seldom more than seven or eight pounds in weight, or two feet in length; it has in its tail a golden circle that renders it perceptible to the Indians at the depth of three or four feet in the water, who shoot it with barbed arrows called wayuwakassy. It feeds upon smaller fish and insects, and it is excellent food, being firm, fat, and with but few bones. Owing to its extreme insouciance it is difficult to salt or dry. It lives only half an hour after being taken from the water.

The Haimora

(*Esox*) is a fine fish, growing to the length of four feet, and twelve pounds in weight. The power of its teeth and jaws is sufficient to cut off a man's hand at the wrist; it is exceedingly voracious, preying upon fish half its size, —is excellent eating, and forms the principal article of food with the Accaways of the Demerara river. The Indians have an ingenious mode of catching this fish, by means of a trap made of a cylindrical piece of bark, about five feet long and six inches in diameter, which, after being stopped at one end, and a live fish fastened to the bottom, is suspended horizontally by a string tied to the branch of some neighbouring tree, at about two feet below the surface; the *haimora* then, attracted by the bait, puts his head beyond the centre, the lower end of the cylinder sinks, it becomes vertical, and the fish, enclosed with its head downwards, is beyond the possibility of escape.'

Mullets

(*Mugiloides*)⁴ are found both in salt and fresh water. A small species is found in canals and trenches, and is much esteemed on account of its flavour. The quality of the mugil varies with its habitat; in the open seas it is a poor fish, but in running streams it enjoys a high character at table.

The Hassar or Hurdback

(*C. Pictus*) is of a dark colour, and covered with a sort of armour, and is found in trenches, muddy walls, and even on land, for these fishes, like many others of this family, are capable of living a long time out of water, and are known to travel overland by means of their spines and fins. They are from six to eight inches in length, and are eaten readily by the natives. They are easily caught, and the ercole boys are often seen returning with numbers of them strung through a thick blade of grass, and carrying them home in triumph for supper. The following species are also known:—*C. cœlatus*, *C. exaratus*, whose habits are allied to the Hassar. One of these species is called by the negroes Banja Man,* from the noise it makes when taken out of the water.'

¹⁶ The Hassar, (*Dorus costatus*) a South American fish, makes rather long journeys on land; and will go on the whole night through in search of fresh water, when the pond in which it has hitherto lived dries up. The shelly plates which cover the body, and the hard ventral fins, enable it to perform such a tour. It can even live for several hours in the hottest sunshine. The Indians, who often fill baskets with these emigrants (for the flesh is very dainty), assert quite correctly, that the Hassar takes a stock of water

⁹ M. MARTIN.

⁴ DALTON.

¹⁶ Life in the Sea by L. WHATELL.

* The Banja is the name given to a kind of robe danced by the negroes in their dances.

¹⁶ with it for the journey. If it finds all the ponds dried up, its bed itself in the soft slimy soil, and sub-sides into a state of asphyxia, until the rainy season arouses it again.

But even more than through its migrations, is this remarkable fish distinguished by its maternal affection, only found in this instance among fish. Sir RICHARD SCHOMBURGK, in his "Travels in British Guiana," tells us, that not only does the Hassar form a perfect nest for its spawn of all sorts of fibres among the aquatic plants, but it watches with the most active maternal care till the young brood slip out. The nest is a real work of art, like that of the Magpie. In April, the Hassar begins forming the nest, until it resembles a hollow globe flattened at the poles, the upper one of which reaches the surface of the water. An orifice, fitted to the size of the mother, opens into the interior. The maternal anxiety of the Hassar is, however, shamefully perverted to its destruction. A small basket is held before the hole, which may be easily found. The nest is then gently tapped, and the Hassar rushes out furiously into the basket with bristling spines, which inflict a tolerably severe wound.

Flounders

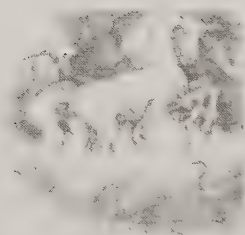
(*Pleuronectes*) ⁴ do not attain a large size here; being from six to twelve inches in length. They are caught in the shallow muddy waters off the coast, and are much esteemed for their flavour, but unless large are troublesome to eat, in consequence of their numerous small bones. They keep alive for a long time after they are caught.

The Electric Eel

(*Gymnatus electricus*). This remarkable fish is frequently met with in the rivers of this colony. When full grown it attains the length of five or six feet, and is then a truly formidable creature, and sometimes nearly prove fatal to the strong swimmer, for if it paralyses him with its touch, he sinks at once to the bottom. Humboldt gives the following account of the method adopted by the Indians to capture them:—⁵ To catch the gymnoti with nets is very difficult, on account of the extreme agility of the fish, which bury themselves in the mud. We would not employ the *barbasco*, that is to say, the roots of the *Piscidea crithyrna*, the *Jacquinia armillaris*, and some species of *phyllanthus*, which thrown into the pool, intoxicate or benumb the eels. These methods have the effect of enfeebling the gymnoti. The Indians therefore, told us that they would "fish with horses," (*embarbasco en caballos*.)^{*} We found it difficult to form an idea of this extraordinary manner of fishing; but we soon saw our guides return from the savannah, which they had been scouring for wild horses and mules. They brought about thirty with them, which they forced to enter the pool.

The extraordinary noise caused by the horses' hoofs, makes the fish issue from the mud, and excites them to the attack. These yellowish and livid eels, resembling large aquatic serpents, swim on the surface of the water, and crowd under the bellies of the horses and mules. A contest between animals of so different an organization presents a very striking spectacle. The Indians, provided with long poles, stand under reeds, surround

¹⁶ Life in the Sea by L. WAAGALL ⁴ DALTON. ⁵ HUMBOLDT *Howing to excite the fish by horses.*



* the pool closely; and some climb up the trees, the branches of which extend horizontally over the surface of the water. By their wild cries, and the length of their reeds, they prevent the horses from running away and reaching the bank of the pool. The eels stunned by the noise, defend themselves by the repeated discharge of their electric batteries. For a long interval, they seem like the more victorious. Several horses sink beneath the violence of the invisible strokes which they receive from all sides, in organs the most essential to life, and stunned by the force and frequency of the shocks, they disappear. Others, parting, with mane erect, and bagging, pressing anguish and dismay, raise themselves and endeavour to escape the storm by which they are overtaken. They are driven back on the mud, or into the mangrove, the water; but a small number succeed in eluding the active vigilance of the fishermen. These regain the shore, stumbling at every step, and stretch themselves on the sand, exhausted with fatigue, and with limbs benumbed by the electric shocks of the gymnoti.

In less than five minutes two of our horses were drowned. The eel being five feet long, and pressing itself against the belly of the horses, makes a discharge along the whole extent of its electric organ. It attacks at once the heart, the intestines, and the entire field of the abdominal nerves. It is natural that the effect felt by the horses should be more powerful than that produced upon man by the touch of the same fish at only one of his extremities. The horses are probably not killed, but only stunned. They are drowned from the impossibility of rising and the prolonged struggle between the electric shocks and the power of the muscles.

(*Prochilodus rubro-lineatus*)¹ is a fresh-water fish found in several of the rivers, where they are captured by nets, or shot by arrows. Their general size is about eighteen inches in length. They appear to feed on the mud or slime which attaches to rocks or stones, swerving from side to side, apparently sucking. They ascend the rivers about April to spawn. The colour is silvery white, with a greenish back, with patches of lake on the fins and tail.

Of these fishes there are two kinds, the red and the white; the former are caught about three or four feet in length. The white species are smaller, and I have eaten them and found them good. These fish are only caught at particular seasons. In the mouth of the river Essequibo a small fish allied to the snappers is found; it is known as the *Pomotis catesbei*, but is seldom seen in town.²

The Sting Ray.

² There are several species of fresh water rays found in Guiana. Their form is not different from those of the salt water rays, and they are generally armed with spines: some with the back more or less spiny, tuberculous, or smooth. The spine or prickle, in the fresh-water *Trygon* is an equally dangerous weapon as that of its congeners which inhabit the sea, and wounds inflicted with it cause frequently severe inflammation. As they generally frequent the bottom, where the bottom is sandy and,

¹ DALTON.

² The name of the fish is not known.

² 'in which they bury themselves, in order the easier to entrap their prey, the Indians use the greatest precaution when they are obliged to draw their canoes over such shallow places. I have known several instances where, nevertheless, wounds have been inflicted, and a swelling of the part, and in some instances feverish symptoms have been the consequence. The Indians use sometimes the leaves of the aromatic guava (*Pisidium parviflorum*, Benth), which grows so abundantly among the rocks in the rivers of the interior, and after having pounded them, they are put on the wound, but I do not think with much effect, at least not in those cases where I saw it applied, laudanum in the first instance, and afterwards warm poultices of cassava-bread to subdue the inflammation, appeared to me the most effective remedy. The pain which the wound causes to the individual appears to be excruciating; no wonder, therefore, that the Indian is likewise under the idea that the spine which inflicts that wound is poisonous. The spine being serrated on each side with barbs and hooks, recurved towards the base, it may be expected that the wound becomes dangerous from its jagged nature, while the extraction must cause additional laceration. Dr. HANCOCK has known the part to mortify and to slough off, and then the healing process went on favourably. I have no doubt that much depends upon the state of health of the individual who is wounded, and the cases which I have witnessed fortunately never came to those extremes.

“The spines are sometimes double, and I have seen an instance where there were three. One is generally larger than the other; no doubt a provision of Nature, that in case one was to break off, the animal may not be entirely deprived of its weapon of defence. These barbs are deciduous, and their size depends much on that of the individual. The Indians of the interior use these spines to arm their arrows with; but among many hundreds which I have seen, none reached the length of three inches.

I nowhere observed these rays in such abundance as in the river Tacutu, when that river was, in April 1839, on its lowest level. As they afford tolerably good eating, we took some pains to secure them. The Indian is always armed with a sharp-pointed pole, which he thrusts before him when he is wading through shallow water which he thinks frequented by the sting-ray. The yellow colour of that fish, so much like the sand in which it buries itself, makes it the more dangerous; and as it strikes with the swiftness of an arrow, the wound itself would be frequently the first token of the approaching danger. The pole, therefore, serves as a protection to dislodge the ray, which darts swiftly forward when it finds that the enemy is superior in strength. The Indian rushes after it, and is generally skilled enough to pierce and transfix the ray with the pointed pole. His first operation, if he has been successful, is to cut off the tail with its dangerous weapon, which he cuts afterwards out, and preserves it carefully for arrow-points.’

The Jew Fish

(*Plectropoma chlorurum*)⁴ ‘is a large golden-coloured fish, which is found in great plenty along the coasts. Its brilliant colour renders it a pretty-looking fish; but its flesh is coarse, and it is chiefly eaten by the poor. This

⁴ DALTON

², SCHOMBURGK'S Natural History of the Fishes of GULAN.

¹ 'fish is called a grooper in the islands, and at certain seasons it is not eaten on account of its supposed poisonous properties. It is very plentiful off the coast.

The Saw Fish

(*Pristis*) are found here: they have been captured near the mud flats, where they apparently delight in groping about for food. The only species which I have seen is the common one, *Pristis antiquorum vel squalus pristis*: but I have heard of several varieties as to size. The largest one taken was about twenty-six feet in length, including its projecting and serrated snout. This formidable bony process or saw, as it is called, presents a most singular appearance. It often measures from six to ten feet in length: it is broadest at the base, gradually tapering towards a truncated extremity. Its broadest part is about the width of a man's hand, and from each side strong bony and pointed spines branch off at right angles at a distance from each other of a few inches; very often one or more of these spinous processes is found broken off, indicative of the rough work to which this fish-saw is evidently applied.'

The Snake Fish

² 'is about two feet six inches long, and an inch and a half in diameter; of a dark brown colour on the upper part, underneath of dull yellow, studded with dark spots; the head is very soft, snout flattened, eyes small, and near the point of the jaw. The greatest singularity connected with this fish is, that its heart will continue to move several hours after the fish is dead. The bladder, or sound, running along the spine, contains air that burns when put in contact with the light.'

The Shark

³ 'There are two or three varieties of shark found here; a very large species, *Squalus vel carcharias prionodon*, is common to the waters of the coasts and the mouths of the larger rivers. Numbers of them may be seen daily swimming about the slaughter-house which is built close to the river, and as animals are killed the offal is cast into the muddy waters, where it is greedily seized upon by the sharks. I have repeatedly seen the dead carcasses of animals floating along the river and surrounded by sharks, who in the rapacity with which they attacked them, frequently drew them beneath the water. It is feared that they often help to destroy sailors and others who accidentally happen to fall into the river. These sharks are frequently captured by the negroes, who destroy them for the sake of the skin and spinal column, as well as the jaw-bone, which are purchased by strangers. Their size varies from six to ten feet in length, but they are of enormous bulk. The colour is of dull brownish black on the back and sides, gradually approaching to a dirty white on the belly.

Another species, the *Carcharias vel squalus henlei*, about four feet to six feet long, is also commonly met with in the river Demerara, about the slaughter-house and stellings. A species of hammer-headed shark is occasionally found, *Zygena malleus vel vulgaris*. The fishermen of the colony call the varieties found here the shovel-nose shark, the ground shark, and the queriman shark.'

CHAPTER X.

THE VEGETABLE KINGDOM.—(*Principal Hardwoods*).—The Mora—Greenheart—Purpleheart—Kakaralli—Determa—Houbaballi—Wallaba—Bully Tree—Siruaballi—Ducaliballi—Itaballi—Suradani—Moraballi—Cucuritiballi—Brown and White Cedar—Cuamara or Tonka—Souari—Washiba—Locust Tree—Hyawaballi—Coutaballi—Simaruba—Monkey Pot Tree—Itikiriboura Balli—Crabwood—Ebony—Candlewood—Letter or Snakewood—Ironwood—Paddlewood—Yari Yari—Black Cinnamon—Silk Cotton Tree—Heri Heri—Lignum Vitæ.

The dense and almost impenetrable Forests of Guiana, contain inexhaustible treasures, in the form of valuable woods admirably adapted for building purposes and cabinet work. Trees, plants, and herbs yielding chemical and pharmaceutical products are also to be found in endless variety, * MALTE BRUN writing of the valuable vegetable productions of the colony states "that Guiana is famed for its medicinal plants. It supplies Europe with Quassia, or the wood of Surinam. The *Dolichos pruriens*, the *Palma Christi* a species of *Ipecacuanha*, *Gentian*, the *Costus arabicus*, the *Copaiba* balsam, and many others are mentioned in the memoirs of BAJON and AUBLET." Although this field of observation is comparatively unknown and uninvestigated, yet, in addition to the simples or remedies familiar only to the Indians, the following drugs and materials used in the arts, some of well known commercial value, may be enumerated, as a few among the products of the Colony. The greenheart, whose bark and seeds yield bibirine; Angostura bark, so efficacious in the milder forms of fever; simaruba, the reputation of which is established in the cure of dysentery; the well known sarsaparilla; spigelia; *Eryngium fetidum*, a new uterine specific; *Rhizophora racemosa*, found remedial in chylous urine; laurel oil, useful in chronic rheumatism, and an admirable solvent of India-rubber; tobacco, physic-nuts, wild cinnamon, ginger, guinea-pepper, capsicums, pimento, nutmegs, blackpepper toyo, lemon-grass, wild honey, the fragrant tonka bean, and the odoriferous vanilla. The vegetable treasures of the mountainous regions have not yet been explored; but Dr. HANCOCK is of opinion that cinchona will be found on the Makerapan range of mountains. Over the whole settled parts of the colony is to be seen the papaw, with its wonderful property of intensifying fresh animal fibre; and in the remote creeks and recesses of the interior grows the *Strychnos toxifera*, yielding the famous Wourali poison. The forests also yield their contributions to the Arts. Gums from the locust tree, from the mani, from the hyawa, from the kurakai, and from the wallaba; Oils

* Cat. Con. from British Guiana to the London International Exhibition of 1862.



39 *The Esquimaux* Rept.

"from the crab tree, from the cocoanut, the monkey-pot, the wangala, the souari, the acuyuri palm and the euenrit palm, are abundant. Arnatto, fustic, lana, turmeric, indigo, logwood and Brazil wood, furnish materials for dyeing. Caoutchouc is yielded by many trees, and the barks suitable for tanning are innumerable. Referring to some of the vegetable products of this colony, Dr. Hancock makes the following observations:—"The *Aequern* (*Acuyuri*) is a palm of moderate size, the fruit of which affords an abundance of a sweet bland oil, of a golden yellow colour, and of the finest quality. The large, sweet and juicy fruit of the *ubadi* affords a delicious wine, and its bark is of great use as an application to foul ulcers. Although this country has been but little explored, it is rather extraordinary that this fruit, one of the finest of the American Continent should still remain totally unknown in Europe. The *dali*, or wild nutmeg, a species of *myristica*, abounds in the interior, and furnishes a vegetable tallow, which forms excellent candles, and, with an alkali, a soap of the finest balsamic quality. Here are numerous species of *cassia*; the *caoutchouc* which gives the valuable elastic resin, and a multitude of gum-resins. The *Hyawā*, or Incense tree, perfumes the forest with its salutiferous balsam: and the great *Siriba* tree, not only furnishes the finest timber in the world for ship-building, but also, by incision, a camphoraceous ethereal fluid, a product which, so far as we know is without a parallel in nature."

The forests yield *caoutchouc*, and a variety of gums of allied nature. One of these recently known as the "*Balata*," possesses properties intermediate between those of *caoutchouc* and *gutta percha*. Although several of this class of gums differ but slightly in chemical composition, it is well-known that they are possessed of very different properties. For example *gutta percha* becomes plastic when immersed in hot water, a property not possessed by *caoutchouc*. Again, while the latter can be extended with facility in all directions, the former admits of extension only in the direction of the fibre or grain. *Caoutchouc* seems impermeable to water even under great pressure and elevated temperature, while *gutta percha* is of a somewhat porous nature, and not so well adapted to the purposes of insulation in the construction of Submarine Telegraphs. This fact appears to have been established by the Messrs. SILVER, of London. While it is desirable that a more extensive knowledge should be obtained of the various gums yielded by the forest trees and plants of this colony, attention should be strongly directed to the importance of extending and improving the preparation of *caoutchouc* as being likely to be attended with benefit in a commercial point of view.* The numerous samples brought from the Upper Essequibo, although of fair value, indicate that the process of preparation admits of great improvement.

A short description of some of the principal Hardwoods of the colony will now be noticed.

* Cat. Con. from British Guiana to the London International Exhibition of 1862.

* This valuable substance known as *Balata*, was first discovered and brought into notice by Dr. VAN HOLST of Berber, but the credit of introducing it to the scientific world and applying it to practical purposes in the arts, is due to Sir W. H. Holmes (late Special Commissioner for British Guiana to the International Exhibitions of London and Paris.) It is largely in demand and considerable quantities are now being exported to the London Exhibition of 1862.

Mora,

¹ (*Mora excelsa*, *Benth.*). This, the most majestic tree of the forests of Guiana, towers above every other, often attaining a height of from 120 to 150 feet, and is frequently seen rising to the height of 60 feet without a branch. When of that length it will square 18 or 20 inches, but is seldom then sound throughout. The wood is extremely tough, close, and cross-grained, so that it is difficult to split, which renders it peculiarly adapted for shipbuilding. The trunk makes admirable keels, timbers, and beams; and the branches, having a natural crookedness of growth, are unsurpassed as knees. Were men-of-war cased with this wood, little mischief would be occasioned by splinters during action. In most respects it is superior to oak, particular in its exemption from dry rot. It ranks as one of the *eight* first class woods at LLOYD'S for shipbuilding. It is abundant along the rivers of the coast region, and extends as far south as lat. 3 deg. N. It grows luxuriantly on sand reefs, and on tracts of barren clay known as "Mora clay," a soil so sterile as not to admit of profitable culture. Sir R. SCHOMBURGK, referring to this tree, states:—"In all my former travels in Guiana, I have nowhere seen trees of this description, so gigantic as on the land adjoining the Barima at its upper course. Indeed, frequently when the boat rounded some point which the river made in its course, and a long reach was before, these majestic trees appeared in the background as hillocks clothed with vegetation, until a nearer approach showed our mistake, and we found that what we considered to have been a hillock was a single tree, rising to the enormous height of 130 to 150 feet, forming by itself, as it were, a forest of vegetation. The importance of the mora in naval architecture is now fully recognised in Great Britain, and a new export trade has been opened to the colony. On the upper Barima this tree is so abundant, and grows to such a size, that the whole British navy might be reconstructed merely from the trees which line its banks, a circumstance well worth consideration, for the river being navigable to vessels of 12 feet draught, the craft intended for the transport of the timber might load at the very spot where the trees are cut down." The bark of the mora is used for tanning; and in times of scarcity the seeds, grated and mixed with decayed wallaba wood, are eaten by the Indians. The seeds also are said to be beneficial in cases of diarrhoea or dysentery.

Greenheart, Sipiri, or Bibira,

yellow variety, (*Nectandra Rodiaei*, *Schomb.*)—This tree is very abundant within 100 miles of the coast region, and its timber squaring from 18 to 24 inches, may be had without a knot from 60 to 70 feet long. It is a fine even-grained hard wood, well adapted for planking of vessels, house-frames, wharves, bridges, and other purposes, where great strength and durability are required. As it is unsurpassed in resistance to tensile and compressive strains, it is admirable for keelsons and for ship timbers. Its excellence is now acknowledged at LLOYD'S, where, along with mora, it ranks as one of the *eight* first-class woods for shipbuilding.

² "The seeds are of the size of a walnut, and possesses a strong bitter,"

¹ (Cat. Con. from British Guiana to the London International Exhibition 1862.
2. SCHOMBURGK.

² which has been extracted by Dr. ROBIN, and been used with great advantage as a powerful febrifuge. In times of scarcity the Indians grate the fruit and immerse it in water, by which process the fecula sinks to the bottom; the flour thus obtained is mixed with rotten wood, pounded and sifted; the bread prepared is bitter and disagreeable.

The black Greenheart is scarce. Its wood is in great request in the islands, as from its well-known durability it is preferred to all others for windmills, shafts, spindles, rollers, arms, water-wheel planks, &c.

The Purple Heart is rather scarce on the coast regions. It is a tree of the largest size, and its wood is used for furniture in consequence of the beauty of its colour and its durability; its elasticity is very great; it has been used with advantage for the construction of mortar-beds.* The Indians call the Purple Heart *mari wayana*. They take off the bark of this tree when fresh cut down, and with very little trouble convert it into a canoe, commonly called a "wood-skin," some of which are large enough to carry twenty to twenty-five persons with perfect safety on smooth water.⁷

Kakaralli,

(*Lecythis Ollaria* Lin.) ⁸ This wood is very abundant, and may be had from 6 to 14 inches square, and 30 to 40 feet long. It is heavy, hard, and close-grained, and more durable than Greenheart in salt water, from its property of resisting the depredations of the ship-worm and barnacle. On this account it is much employed in the construction of wharfs, sluices, &c. It is also used for house frames. The bark is easily stripped off, and consists of numerous layers, which the Indians separate by beating with a stick, and SCHOMBURGK has counted as many as 70 of these layers in a single strip. When separated they have the appearance of thin satin paper. They are dried in the sun and used as wrappers for cigars. The tree, which grows tall and straight, is found mostly on rising ground along the banks of the rivers, and there are several varieties known as black, red, and white. Height of the tree 90 feet; diameter of the trunk 18 inches.

Determa

This tree is plentiful, and grows to a great height, yielding planks from 12 to 36 inches wide. It is the most durable wood for boat-building that Guiana produces, provided copper nails are used. It is also used for masts, booms, and spars; and, as insects will not infest it, is well adapted for chests, wardrobes, &c.

Houbabulli

A light brownish wood, beautifully variegated with black and brown streaks; easily worked, takes a fine polish, and makes beautiful furniture and cabinet work of every description. It may be had from 15 to 20 inches square, and from 40 to 70 feet long. The tree grows to the height of about 100 feet, and is by no means scarce in some localities.

Wallaba

(*Eperua falcata*, Aubl.) This wood is of a deep red colour, and is hard and

² SCHOMBURGK.

⁸ Cat. Con. from British Guiana to the London International Exhibition 1862.

⁷ Col. MOORE, of the Royal Engineer, observes that the "black Green Heart" and the "Purple Heart," were the only woods which stood the test, while all others failed, as mortar-beds at the siege of Fort Mifflin.

heavy, but splits freely and smoothly, and is much used for shingles, staves, palings, posts, house-frames, &c. It is impregnated with a resinous oil, which makes it very durable both in and out of water. A roof well shingled with this wood will last more than 40 years. The tree is very abundant throughout the colony, growing generally on the banks of rivers. It may be cut 30 or 40 feet long, and 15 to 20 inches square. The tree yields an oil and a gum-resin having medicinal properties.

Buruck—Bully, or Bullet Tree

(*Sapota Mulleri* Miq.) This tree is found throughout the colony, but most abundantly in Berbice. It is of the largest size, often 6 feet in diameter, and having the trunk destitute of branches nearly to the top. The leaves, branches, and trunk produce a whitish milk, forming the gum now known as "Balata" the properties of which appear to be intermediate between caoutchouc and gutta-percha. The fruit is of the size of a coffee berry, very delicious, and resembling the Sapodilla. The wood is dark brown, variegated with small white specks, and is extremely solid, heavy, close-grained, and durable. It is chiefly used in house-framing, for posts, beams, and floors; and as the weather has but little influence on it, is esteemed the most valuable timber for the arms, shafts, and framework of windmills. It squares from 20 to 30 inches and may be obtained from 30 to 60 feet long. In salt or brackish water it is sure to be attacked by the worms. A tree cut down by SCHOMERCK, near the Cuyuni, measured 67 feet to the first branches, and thence to the top 49 feet,—in all 116 feet. The upper portions of the trunk and branches are manufactured into wheel-spokes, palings, &c. A decoction of the bark is used, in the form of a clyster, and is said to be very efficacious in a disease known to persons residing in the interior by the name of "Quata," ("Kaina-Kuhu," Arawaak name), which is very prevalent among the Indian Tribe at certain seasons of the year, and more especially at the commencement of the dry season in September.

Siruaballi or Silverballi,

yellow variety, (*Nectandra, or Oreodaphne* Sp.?) This tree grows to a considerable size, but is then often hollow. It will, however, square sound from 10 to 14 inches, and often from 40 to 50 feet long. The wood is lighter than water, and contains a bitter principle, which resists the attacks of worms. Hence it is much used in the colony for the outside planking of vessels and boats. It is also used for masts and booms. There are four varieties or species of this tree, distinguished as black, brown, yellow, and white silverballi, possessing the same properties, but of these the white is least esteemed.

Ducaliballi.

This tree is of large size, but not plentiful. The timber may be had 40 feet long, but seldom more than 20 inches in diameter. It is a deep red, close-grained wood, more even and compact than mahogany, and takes a high polish; it is in great repute for cabinet and turning work. It resembles, or perhaps is identical with, the Brazilian beef-wood.

Itaballi,

(*Tochysia tetraphylla*, Aubl.) This tree grows from 60 to 80 feet high,

* The timber may be had from 40 to 50 feet long, and 18 to 20 inches square. It is hard, tough, and durable in an eminent degree, and it is said that a piece one inch square, and of a given length, will bear 100 lbs. more weight than any other timber in Guiana of the same dimensions. It is, therefore, peculiarly adapted for any other purpose where resistance to great pressure is desired. It is used for shafts, mill-wheels, and cogs. This tree yields the well known Tonka Bean.

The pods of this plant only produce one seed in each; this seed or bean is an inch in length, shaped somewhat like a thin almond, covered with a shining black skin, and is of an agreeable and powerful odour, resembling newly-made hay: the odoriferous principle resides in a substance called *courmarine*. It is used principally for scenting snuff. The bark and the leaves contain an aromatic oil.

Surahwa, Souari, or Suwarrow Nut

(*Caryocar butyrosun.*) The Surahwa nut is somewhat kidney-shaped, about half the size of an egg. The kernel is perhaps the most agreeable of all the nut kind; it is so bland and sweet as an almond, with a softer texture, and a milky flavour. The timber is highly valued for shipbuilding, and the oil expressed from the nut is much esteemed in Demerara; it equals that of the olive in sweetness.

Washiba or Bow-Wood.

A strong, hard, durable, and elastic wood, much esteemed by the Indians for bows and war-clubs. Height of the tree 110 feet. It is not plentiful.

Simiri or Locust Tree,

(*Hymenæa Courbaril, Lin.*) This tree, which is abundant in the colony, often attains the height of 60 or 80 feet before it throws out a branch, and has a diameter of 8 to 9 feet. The wood is close-grained, hard, and compact, of a fine brown, streaked with veins, and takes a beautiful polish, which recommends it for furniture. As it does not split or warp, it is well adapted for mill timbers and engine-beds. A good deal of it is sent to England to be used as trenails in planking vessels, and in beams and planks for fitting up steam engines. It has also been found to answer well for the frames, wheels, &c., of spinning machines. The Indians and Negroes are fond of the farinaceous saccharine pulp enveloping the seeds. The Indian make "woodskins" or canoes of the bark. The tree yields what is supposed to be the gum animi of commerce.

Hyawaballi, or Incense Tree,

(*Leica heptaphylla Aubl.*) This wood is of large size, and bouyant, and said to be proof against the attack of worms. The tree produces a fragrant gum.

Coulaballi

(*Theobroma, Sp.?*) Abundant on the banks of the Demerara, Essequibo, and Cuyuni rivers, growing chiefly upon sand hills, close to the water. The wood is very hard and durable if not exposed to weather. It is principally used for house frames, and will square 12 inches, from 30 to 40 feet long. Height of the tree 72 feet; diameter of the trunk 15 inches.

Simaruba,

(*Simaruba officinalis, Dec., Simaruba amara, Aubl.*) This tree grows on

* Cat. con. from British Guiana to the London International Exhibition 1862.

³ Hill sides to the height of 80 feet, branching and somewhat crooked; its wood resembles white pine in colour and quality. It is light and easily worked, and may be had in boards 20 to 40 feet long and from 24 to 30 inches wide. It is much used for partitions and other inside work of houses, but will not bear exposure to the weather.

The simaruba tree bears a fruit about the size of an English pippin, and is divided into partition like a walnut it has a pleasant bitter taste. It is an efficient remedy against dysentary, and a powerful stimulant.

Wadaduri or Monkey Pot,

(*Lecythis grandiflora*, Aubl.) This tree is plentiful throughout the colony. It grows tall, straight, and to a large size. The wood is hard, close-grained and handsome. It is used for furniture, and makes good staves for hogs-heads. Height of the tree 106 feet, diameter of the trunk 30 inches.

Hikiriboura-balli or Tiger-Wood,

(*Machaerium Schomburgkii*, Benth.) Found in the upper parts of the Demerara and Essequibo rivers, but not very abundant. The wood is hard and very beautiful, being of a rich brown colour, and spotted like a Tiger skin. The heart of the tree only is used. Height of the tree 130 feet; diameter of the trunk 20 inches.

Caraba, or Crab-Wood,

(*Carapa guianensis*, Aubl.) This tree is plentiful, grows tall and straight, and may be cut from 40 to 60 feet in length, with a square of 14 to 16 inches. The wood is light, and, as it takes a high polish, makes excellent furniture. It is also much used for floors, partitions, and doors in dwelling-houses. Masts and spars are formed of it, and it is sometimes employed for sugar hogsheds, and even shingles, as it splits freely and smoothly. There are two varieties, red and white. The seeds yield "Crab Oil," and the bark is useful for tanning, so that this tree ranks among the most useful in the colony.

Banya, Bannia, or Ebony,

(*Swarizia?*) A large tree of fluted surface, with a trunk of considerable girth, but rarely exceeding 40 or 50 feet in height. The heart of the tree seldom more than 8 or 10 inches in diameter, and often faulty, is alone used. The wood is black, heavy, hard, and strong, and used for picture frames, inlaying, veneering, and other ornamental purposes, and by the Indians for war clubs. It is not very abundant.

Maniballi, or Candle-Wood,

(*Apocynaceae?*) This tree grows very straight; the timber can be had from 30 to 40 feet long, and from 8 to 10 inches in diameter. It is hard, close, and even-grained, and is excellent for the frames of houses. It is from a variety of this tree that the Indians procure the wax (Karman or Carimani) which they use in fastening their arrow heads, hooks, &c.

Letter-Wood, or Snake-Wood,

(*Piratinera guianensis*, Aubl.; *Brosimum Aubletii*, Poepp.) This tree, which is very scarce within several hundred miles of the sea coast, is often from

³ Cat. Con. from British Guiana to the London International Exhibition 1862.

“60 to 70 feet high, and from 2 to 3 feet in diameter. The bark is of a dark grey colour, and when wounded yields a white milk. The outer part of the wood is white and very hard; the heart (which in the largest trees scarcely exceeds 6 or 7 inches in diameter,) is of great weight hardness, and solidity, of a beautiful deep red, with black spots of various forms, sometimes resembling hieroglyphics, which gives rise to its names of “Letter-wood” and “Snake-wood.” It is susceptible of a brilliant polish, but the small size of the mottled part, and its great value even in the colony, limits its use almost entirely to veneering, to picture frames, to small pieces of furniture, and to walking sticks. Its extreme hardness renders it difficult to work. The Indians form it into bows more for ornament than use. At the foot of the Canuku Mountains, near the river Rupununi, at the upper Essequibo and Corentyne, it is still plentiful; but all these places being several hundred miles from the sea coast, it is both difficult and expensive to convey it to the settled districts of the colony, where it is sold by weight at the price of about eight pence per pound. There appears to be a variety, the heart of which is not mottled, and this the Indians are said to prefer it to the other for their bows.”

Ironwood Tree.

“Height about fifty feet, and six in circumference; bark, of a whitish grey; leaves, light green, three inches in length; flowers white, with red berries.”

Yarura, Massara, or Paddle-Wood,

(*Aspidosperma excelsum* Benth.) “The trunk of this tree, which rises to the height of 50 feet before it begins to branch, and is 5 or 6 feet in diameter, is singularly fluted or indented, resembling a fasciculus of numerous slender trees, or a tall Gothic shaft of clustered columns. Of the flat projection or buttresses of the lower part of the trunk the Indians make their paddles and axe-handles. The wood is light and elastic, but hard and very strong, and is preferred to all others for cotton-gin rollers. It would also make excellent floats for paddle-wheels of steam vessels.

Yari-Yari, or Yellow Lance-Wood,

(*Duguetia quitarensis*, Lindl.) A slender tree; found in tolerable abundance. The wood is to be had from 15 to 20 feet in length, and from 4 to 6 inches in diameter. It is very close, tough, and elastic, and is in great repute for carriage shafts. When small it is used for whip handles and fishing rods, and for the latter purpose it would probably be much esteemed in Europe. The Indians use it to make their arrow points.

Carisiri, or Black Lance Wood.

A tall, straight, slender tree, tolerably abundant. It seldom attains a greater thickness than from 4 to 8 inches in diameter, and is remarkable for growing with but little taper. The wood is close-grained, very tough and elastic, and is in great repute for spars, beams, and gig-shafts, being superior to the Yari-yari, or yellow Lance-wood. Height of the tree 50 feet.”

Black Cinnamon

“is generally found about fifty feet in height and two feet in diameter, and delighting in arid and barren soils. The leaves are about the size of those of the orange tree, which they also resemble in fragrance. When fresh cut,

⁹ ‘the wood is of a deep blood red, but in time becomes quite black; it is very durable, takes a fine polish, and, from its hardness and smoothness of surface, peculiarly adapted for mill cogs, wheels, and other purposes, where its great weight is not an objection. There is an inferior sort, called

White Cinnamon

(from its wood being of a lighter colour), only valuable for its leaves and berries, which possess an aromatic pungent smell and a powerful spicy quality; it is esteemed an excellent substitute for the East India cinnamon.’

The Silk Cotton Tree

⁶ ‘grows to an enormous size, one hundred feet in height, and twelve feet in diameter. Its roots spread to the distance of fifteen and twenty feet all round. The trunk is covered with a thick ash-brown coloured bark, set with short, sharp prickles. The tree seldom puts forth a bough till it has reached the height of sixty feet, and more. Its leaves are oblong, and it is found in blossom only once in three years. The blossom consists of a green calyx, with five white folliculi, and the petals with five stamina, and is succeeded by a bud containing a light grey silky cotton, which, by Europeans and other inhabitants of the colony, is used in stuffing pillows and mattresses. The Indians chiefly use it for winding round the extremity of their arrows, which they blow through a tube of ten, or more, feet in length, the point of which has been poisoned with the worali poison. When such an arrow pierces the flesh, it inevitably proves fatal within a few minutes. The Indians also manufacture their largest canoes from this tree, although it is not as lasting as many others.’

Heri-Heri.

⁹ ‘a large and majestic tree, furnishes the Indians with an excellent material for kindling a fire. Taking two pieces of this tree, they cut a notch in one, and placing the other perpendicularly into the notch so made, by rubbing it round and round between their hands for a few seconds, the friction causes it to ignite; they then light the maroon, which is a species of moss produced from the *beheresda*, and collected by the ants from its leaves to form their nests with.’

Lignum Vitæ or Mackia.

⁶ ‘This tree attains the height of from 30 to 60 feet, squaring 16 to 18 inches. It is a valuable hard wood, used for mill cogs and shafts, and occasionally for furniture.’

⁹ M. MARTIN.

⁶ BERNARD.

⁸ Cat. Univ. from British Guiana to the London International Exhibition 1862.

CHAPTER XI.

THE VEGETABLE KINGDOM—(Concluded.)—The Cabbage Palm—Coco Nut—Manicole—Sago Palm—Yeta—Ukarite—Tooroo—Aenyuru—Awara—Troolie—Mangrove—Breadfruit—Bread Nut—Snake Nut—Cocoa—Coffee—Cotton—Tobacco—Rice—Sugar Cane—Plantain—Banana—Orange—Lime—Shaddock—Forbidden Fruit—Sapadill—Granadilla—Semitoo—Marmalade Tree—Avogada Pear—Guava—Tamarind Tree—Cashew Nut—Wild Nutmeg—Mango—Pine Apple—Star Apple—Pomrose—Sour Sop—Melon—Ginger—Vanilla—Arnatto—Indigo—Logwood—Iana—Hya Hya or Cow Tree—India Rubber Tree—Saudbox Tree—Ipecacuanha—Physic Nut—Papaw—Quassia—Balsam Copavi—Laurel Oil Tree—Hiary—Worali—Silk Grass—Mahoe—Cassava—Indian and Guinea Corn—Yams—Sweet Potatoes—Ochroes—Sorrel—Peppers, etc.

The Mountain Cabbage Palm

(*A. oleracea*.) This tree grows to the height of from 80 to 100 feet and forms a picturesque object in the general landscape. It is generally planted on the sides of avenues and in front of houses; its great height and remarkable plume-like branches spread out horizontally, from which depends the close set pinnated leaves that agitated by the slightest breath of air, render it highly ornamental.

Cocoa, or Coker Nut Palm,

(*Cocus nucifera*.) This valuable tree thrives well in Guiana, especially upon the plantations on the sea coast. Large quantities of the nuts are annually exported. ¹⁷ 'To the inhabitants of the tropics the cocoa-nut is invaluable; it furnishes them with a sweet wholesome food, a refreshing drink, a material for cordage, and various domestic utensils, besides a valuable oil, which is used for many economic purposes. The nuts are enclosed in an outer husk, which has three flat sides, terminating at the top in a blunt point, consequently a transverse section of the entire nut would be triangular; this outer husk is composed of a large mass of very strong fibres. Within is the nut, enclosed in a very hard oval shell, about a quarter of an inch in thickness; that is used in many ways by the natives of warm countries in making various domestic utensils.

The quantity of nuts produced by one palm is immense: at least from twenty to twenty-five are borne monthly, and as the nut is very nutritious, their utility is very great in tropical climates. Besides the nut, coir-fibre, and cocoa-nut oil, the cocoa-palm produces toddy, or palm-wine, which, though made from various palms, is chiefly made from the cocoa-palm.'

¹⁷ Archer's Botany.

The Manicole Palm

¹² 'is mostly found in marshy places, and is always a proof of a rich and luxuriant soil. It is from 8 to 10 inches in thickness very straight, and grows to the height of from thirty to fifty feet from the ground: the trunk, which is jointed at the distance of two or three feet, is of a light-brown colour, hard externally for the thickness of half an inch, but pithy, like the English elder, and good for nothing within, except near the top, where the wood becomes green, and incloses a delicious kind of white fruit, called cabbage, peculiar to all the palm-trees. On the top of all this the manicole tree spreads in beautiful green boughs, with leaves hanging straight downwards like silk ribbons, which form a kind of umbrella. The manner of using it for building huts or cottages, is by cutting the trunks in pieces of as many feet long as you wish to have the partition high; for instance, seven feet, which pieces are next split into small boards, the breadth of a man's hand, and divested of their pithy substance, and then they are fit for immediate use. Having cut and prepared as many of these laths as you may want to surround the dwelling, nothing remains but to lash them in a perpendicular position and close to each other to two cross bars of the same tree fixed to the corner posts, and the whole is cut and shaped with the bill-hook, and tied together by the nebees. The nebees are a kind of ligneous ropes of all sizes, both as to length and thickness, that grow in the woods, and climb up along the trees in all directions: they are so plentiful and wonderfully dispersed, that, like the ligneous cordage of the mangrove, they make the forest appear like a large fleet at anchor, killing many of the trees by mere compression, and entwining themselves with each other to the thickness of a ship's cable, without any kind of foliage, which gives them sometimes a wonderful appearance, particularly when ascending lofty trunks in a spiral manner to the top, from which they next hang down to the earth, take root, and re-ascend. Sometimes the thin nebees are so closely interwoven, that they have the appearance of fishing nets, and game cannot get through them. These nebees are exceedingly tough, and may be used for mooring large vessels to the shore.'

The Sago Palm

¹³ 'These are palm-trees of moderate size, from twenty to thirty feet in height, and usually found in swampy or marshy situations. They have thick stems, which externally are hard like that of the bamboo; the interior is filled with pith, or cellular tissue, which contains an enormous quantity of starch or sago. This large supply of vegetable nutriment is provided for the maturation of the fruit; for no sooner has the flowering of the palm ceased, and the fruit begun to form, than the cells, with their store of fecula, all disappear, leaving the stem quite a hollow shell. This is one of those wondrous provisions of an all-wise Creator for carrying out the beautiful varied arrangements of the Vegetable Kingdom, and at the same time furnishing food to his favoured creature man.

In order to procure the sago, it is of course necessary to cut down the tree; this is done before the flowers are developed; the stem is then cut

'into short lengths and split open, and the pith scraped out and submitted to repeated washings, which separate the sago. By this operation the sago sinks in the water, and the fibrous and cellular matter of the stem floats and is easily separated; the sago is afterwards dried in the sun, and constitutes the *sago-flour* or *sago-meal* of commerce, which is now used as starch by our manufacturers in considerable quantities; it is also used as food by the natives of the Indian Archipelago, where the plants are native, and where they are extensively cultivated. In order to fit this sago-meal for food in the European market, the natives submit it, whilst wet, to a curious process of granulation, which, besides forming it into small round translucent bead-like grains, gives it a pearly lustre.'

The Eta Palm,

(*Mauritia fleecosa*) is a beautiful tree and is adored by the Indians for the numerous uses to which it can be applied. 'The fruit tastes like elchese, and is eaten with the pith, manufactured into a kind of cake of the consistency of sago. The young leaf is woven into hammocks, ropes, and baskets. The old leaf thatches the house. The trunk, split up, incloses it, and makes the flour. The pith of the large arm of the leaf, split longitudinally, makes a sail for the corial; and, by raising the fibres of the arm, and placing a bridge under, they make a rude kind of musical instrument.

The Cockarito Palm

usually grows to the height of fifty feet, and produces the most delicate cabbage of all the palm species. The cabbage is found in the very heart of the tree, at its summit, enclosed in a green husk, which is peeled off in strata, until the white cabbage or inner leaves appear in long, thin, white flakes, and are in taste much like the kernel of a nut; the heart or centre of it, is the most delicate, and, being sweet and crisp, is frequently used as a salad; the outside, when boiled and eaten with butter and salt, is far preferable to an European cabbage. There is a worm or maggot natural to this tree which is reckoned a great delicacy in the West Indies. It is the larva of a black beetle (*Urcutio*), and grows to the length of four inches, and as thick as a man's thumb; it is called Grogroo, and although disgusting in appearance, when well dressed furnishes a delicious treat, partaking, it is thought, of the flavour of all the spices of the East. Grogroos are only to be found on such cabbages as are in a state of decay. The bark of this tree, on account of its hardness, is used by the Indians for the manufacture of their poisoned arrows. The are generally cut twelve inches long, with one end sharpened to a point, which is dipped into the poison of the *wouralie*, so called, from the nebe, or bushrope, which forms the principal ingredient in its composition. The other end is wrapped round with a small piece of cotton, adapted to the cavity of a long and hollow reed (usually about nine feet long), into which the arrow is inserted, and by one blast of the breath it is discharged with extraordinary swiftness and unerring aim, carrying inevitable death to the person or animal wounded by it.'

The Tooroo Palm

(*Oenocarpus Batava*, Mart.), ⁸ 'This Palm grows to the height of 60 or 70 feet. Its woody outside is used for inland work, billiard cues, walking sticks, &c. Of the fruit a drink resembling chocolate is made.

The Acuyuru Palm,

(*Astrocaryum aculeatum*, Meyer.) The trunk of this palm, which rises to the height of 60 or 70 feet, is covered with long prickles. The woody part of the stem is hard and takes a fine polish, and is used for cabinet work, walking sticks, &c. The fruit, about the size of a hen's egg, contains a large seed covered with pulp, from which a bright yellow oil is obtained. Both pulp and oil are edible.⁹

The Awara or Avaira

¹² 'is less remarkable for the excellence of its flavour than its beautiful appearance, grows upon a species of palm tree, and is of an oval form, about the size of an Orlean plum, and of a rich deep orange colour, nearly approaching to red. These stones are large, extremely hard, and as black as jet or ebony: but the pulp which surrounds them is very thin.'

It is a sure guide to the natives in preparing their newly cut fields for cultivation—a large show of fruit in the first stages, indicate an average dry season or perhaps severe one; which is the proper time for burning the plot of ground to be cleared.

The natives use the fruit in many ways, among others, they pound in a mortar until the pulp is separated from the seed or nut, and then add boiling water, strain after cooling, and add a little sugar. This beverage is highly nutritious, and after one or two libations, extremely palatable.

The fruit are also used by all classes of settlers without any preparation after being taken from the tree.

The Troolie Palm

is abundant in many parts of this colony more especially in the Essequibo Islands and the river Pomeroon—The Troolies are chiefly employed for roofing estates logies and building, being durable and well calculated for the purpose. The leaves are large twenty feet long, and about two broad, of a strong texture, and straight fibres growing from a small fibrous root, from which arise eight or ten stems, each producing a leaf of the above demension.

The Mangrove Tree

(*Rhizophora mangle*) Skirts the whole sea coast of Guiana. ¹ 'It is a tree of singular structure, as it shoots fresh roots as it grows, which, when the tree is at its full age, may be found six or eight feet from the ground; to which they gradually tend in regular succession; timber very heavy of a free grain, and employed principally for the manufacture of fishing-rods walking-sticks, arrows, and other light purposes; leaf very thick and stiff, and about eight inches long and nine wide. The tree seldom attains more than a foot in diameter, and fifteen or twenty feet in height. The leaves and bark yield a thick juice, which is very viscid, and of a yellow colour.'

⁸ Cal. Con. from British Guiana to the L. of the Essequibo at 12 1/2 from 1866.
12 SEPTEMBER. 3 M. MAR 18

Bread-Fruit Tree,

(*Artocarpus incisa*.) ¹⁰ This tree is a native of the Islands of the Pacific Ocean, and is distinguished by having the male flowers in catkins, with a two-leaved perianth and one stamen; the female flowers naked; the fruit roundish, fleshy, and tuberculated. The bread-fruit tree is a rather slender tree, of 40—50 feet high, often rising almost half its height without a branch. It has large, pinnatifid leaves, frequently 12—18 inches long, dark green, and glossy. The fruit is generally oval, or nearly spherical, and about the size of a child's head. It is a *sorosis*, a compound or aggregate fruit formed from numerous flowers on a common axis, and is covered with a roughish rind, which is marked with small square or lozenge-shaped divisions, having each a small elevation in the centre; is at first green; when imperfectly ripened, brown; and when fully ripe, assumes a rich yellow hue. It is attached to the small branches of the tree by a short thick stalk, and hangs either singly or in clusters of two or three together. It contains a somewhat fibrous pulp, which, when ripe, becomes juicy and yellow, but has then a rotten taste. At an earlier stage, when the fruit is gathered for use, the pulp is white and mealy, and of a consistence resembling that of new bread. In a still less mature state, the fruit contains a tenacious white milk. The common practice in the South Sea Islands is to cut each fruit into three or four pieces, and take out the core; then to place heated stones in the bottom of a hole dug in the earth; to cover them with green leaves, and upon this to place a layer of the fruit, then stoues, leaves, and fruit alternately, till the hole is nearly filled, when leaves and earth to the depth of several inches are spread over all. In rather more than half an hour, the bread-fruit is ready; 'the outsides are, in general, nicely browned, and the inner part presents a white or yellowish cellular pulpy substance, in appearance slightly resembling the crumb of a wheaten loaf.' It has little taste, but is frequently sweetish, and more resembles the plantain than bread made of wheat-flour. It is slightly astringent, and highly nutritious.

Bread-Nut Tree,

(*Brosimum alicastrum*) is allied to the bread-fruit, and is a native of Jamaica. It is distinguished by male and female flowers on separate trees, in globose catkins, with peltate (shield-like) scales for perianth, and the fruit a one-seeded drupe. The bread tree has ovate-lanceolate evergreen leaves; it abounds in a tenacious gummy milk. It leaves and young shoots are much eaten by cattle, but deleterious qualities are developed in them as they become old. The nuts, boiled or roasted, form an agreeable article of food, and are eaten instead of bread. Their taste resembles that of hazel-nuts.

Snake-Nut Tree

(*Ophiorhiza paradoxum*, Schomb.), ⁸ 'This tree has received its name from the peculiar, coiled embryo of the seeds, resembling a snake.'

The snake-nut tree grows along the banks of creeks in certain localities only. It does not attain a great size or height, and is not adapted for the ordinary purposes, such as building, &c. The branches spread and hang over the streams, and are something like that of the Etoulie Wallaba. The nuts much resemble those of the *nux vomica*.

The Cocoa or Cacao Tree

(*Theobroma cacao*), "is found plentifully in this country, where it must have been imported many years ago. It yields numerous large nuts or pods, in which the seeds, from which cocoa is prepared, are found embedded in a kind of pulp. When separated from the husks the seeds are dried, and the creoles of this colony prepare an excellent chocolate by pounding them, and working them up, with a little spice and other substances, in long rolls, which are carried about the street for sale. With a little care and attention this important article of commerce, which is in such demand in England, and is chiefly introduced from foreign countries, might be exported from British Guiana in considerable quantity. It appears to be a hardy tree, and, once planted, large forests might be grown, requiring little trouble to watch and protect them.

Coffee

was cultivated in this colony as far back as the year 1721, when, its value and importance being recognised, as well as the suitableness of the soil for its growth, a great many plantations were laid out, and it was for a very long time almost the only staple of Berbice and Demerara. The coffee trees were found to grow very well on the lands of the coast and rivers, but the indefatigable Dutch had the sagacity to find out that it grew equally well, if not better, in the hilly regions of the interior, and the traces of coffee plantations have been found by travellers about 40 leagues inland. Dr. HANCOCK* stated, that at a place called Oropucary, about 120 miles up the river Essequibo, a coffee field, planted many years by the Dutch, long since abandoned, was found to continue bearing in abundance, "nature alone, on this fertile soil, keeping up a reproduction of the trees."

There are at present a few plantations on which coffee bushes are still standing and from which the berries are gathered when ripe by a few old and invalid people; the cost of good labour is too great to expend on the unremunerating berry, but nevertheless some care and attention is bestowed by a few proprietors of such estates as furnish the trees.

Cotton,

(*Gossypium*.) "The cotton plant is a native of India; thence it appears to have spread into China, for it does not seem to have been used in the ninth century, as the two Arabian travellers who then visited China observed that the 'Chinese dressed not in cotton as the Arabians did, but in silk;' and it is supposed that the cotton manufacture was not established there until the thirteenth century. From India it also spread into Persia, Arabia, Egypt, Central and Western Africa, and Southern Europe.

There is positive proof that it was in use in America at a very early period, and consequently that some species are also indigenous to the New World, for "Columbus found it in the West India Islands. Cortes, in his Conquest of Mexico, is described as receiving garments of cotton among the first presents from the natives of Yucatan; also cotton cloths to cover his huts; and from Montezuma, cotton fabrics of fine and silk-like delicacy of texture;" and it was found afterwards to constitute the principal clothing

* DALTON.

17 Archer's Botany.

* Observations on the Climate, Soil and Productions of British Guiana.

¹⁷ 'material of the Mexicans. Magelhaens found the natives of Brazil employed it in stuffing their beds. Raw cotton and cotton fabrics have also been found in the ancient Peruvian tombs. Indigenous cotton-plants have been discovered in the Galapagos, the Sandwich Islands, the Sechelles Islands, in Java, Borneo and other Indian Islands, and in the islands of the Chinese coast. Different botanists have described the species of cotton as amounting to about twenty-four in number, but many of these are very questionable.' Cotton began to be exported from this colony in 1740, and up to the year 1820 was the principal export.

¹⁸ 'In 1803 the Counties of Demerara and Essequibo shipped 46,485 bales, of an average weight of 300 pounds each. After the American war the enormous increase of that crop in the northern continent, together with the lowering of the duties on Foreign cotton, without a corresponding decrease in the duties on Foreign sugar, placed cotton in so unfavourable a position with regard to sugar, that between the years 1819 and 1823 more than two-thirds of the hands employed in cultivating the one were transferred to the other; and this is easily accounted for by the following list of prices:—In 1817 cotton was worth 20d. per pound; in 1819, 13½d.; in 1820, 11½d.; in 1821, 8½d.; at which price it ceased to be remunerative in comparison with coffee and sugar, which were then highly protected, and from that date the extent of land in cotton cultivation has gradually diminished.'

Of late the cultivation of cotton has been again renewed; it is doubtful however, whether our sugar planters can with advantage, add its culture to that of the present staple, Sugar. SCHOMBURGK makes the following remarks and observations respecting cotton:—

¹⁹ 'The indigenous cottons are very numerous, and the Indian has generally a few shrubs of that useful plant around his hut. However, I have seen the industrious Maensi cultivating it more extensively. The Hammocks which the Indians manufacture of it are valued for their strength and durability, and are considered superior to the European article. Like the staples before enumerated, cotton has been only cultivated by the colonists in the coast regions; but its cultivation has, in a great measure, been abandoned because our cottons, raised by free labour and in a British colony, were undersold by those produced by slavery in the United States. If, with regard to the abundance and cheapness of labour, British Guiana were put on the same footing as the slave states in America, an inexhaustible supply of cotton of every description might be produced. There is no doubt that all kinds of cotton, from the best long staple down to the finest short staple, might be cultivated in the colony, as the kind which does not thrive in one soil or climate might be produced in another. An extent of sea coast of two hundred and eighty miles from the River Corentyne to the mouth of the Orinoko, would produce cotton vying with the best in the world. I doubt the opinion that the finest cotton will not grow at a greater distance than twenty miles from the sea. I have sent samples of the wild cotton from the interior to the colony which were admired by competent judges for their fine long staple and silky appearance. No care whatever had been bestowed upon the cultivation of these plants which grew at

¹⁷ Archer's Botany.

¹⁸ Col. Con. from British Guiana to the London International Exhibition 1862.

"a distance of four hundred miles from the coast. Although the growth of the plant was not luxuriant, it was covered abundantly with cotton of the most excellent quality; indeed, it would be highly advisable for the cotton growers on the coast to exchange seeds."

Tobacco Plant

(*Nicotiana tabacum*)¹⁷ is found growing wild in various parts of the colony, and appears to be indigenous to South America. It is commonly met with about the Indian villages in the interior, the plantations on the coast and rivers, and even about the roads and gardens of Georgetown. Samples procured from the natives have been found to equal in quality and flavour that exported from the Hayannah. The leaves are large, and when simply dried in the air, can be manufactured into very good cigars. No attention, however, is paid to the cultivation of this important plant in this colony, although large quantities of leaf tobacco and cigars are annually imported for general consumption. The fresh leaves are occasionally employed by the creoles for medicinal purposes. If applied to the seat of pain, they often afford relief; but great caution is required in its use, for I have more than once known instances of poisoning to result from the indiscriminate and long-continued application of the leaves to inflamed and swollen legs. Tobacco was perhaps the first article of any importance cultivated by the early settlers in this colony. So early as the year 1600 mention is made of tobacco plants being found growing in abundance in the cleared lands, but its cultivation was not long persisted in, as it yielded to the production of more lucrative articles of commerce.¹⁸

Rice,

¹⁷ (*Oryza sativa*). This useful grain is a native of the East Indies, whence it has spread to all the warm parts of Asia, Africa, and the southern parts of America; its habit of growth is very much like the oat, the grain hanging gracefully from the very thin hair-like pedicels of an elegant loose panicle, less however than that of the oat. Rice appears from its astringency to be admirably adapted to the use of the natives of warm climates, where it usually constitutes the staple food of the lower classes. That from the Southern States of North America is decidedly the best, being much sweeter, larger, and better-coloured than that of Asia, where its cultivation is less carefully managed. The States of Carolina produce the best American, and Patna the best East Indian Rice.¹⁸

¹⁸ Several experiments, on a considerable scale have been lately made with the view of introducing Rice as an article of cultivation in the colony. The most important of these has been that conducted, in 1853, by Mr. A. V. COLVIN, on plantation *Vire-la-Force*, where about 70 acres of land, in second growth "bush," were cleared, and planted with seed brought from the State of Georgia. The Rice grew to great perfection, and was estimated to yield 60 bushels per acre; but from damage sustained in the stacks, which were exposed to four months of rainy weather, while awaiting the arrival of a thrashing machine from the United States, the actual return of good rice fell far short of that quantity. Part of the rice in husk, or *paddy*

¹⁷ Archer's Botany.

¹⁸ DALTON.

¹⁸ Cat. Con. from British Colonies &c. &c. &c. International Exhibition of 1862.

was shipped to London, and when dressed sold for 30 shillings per hundred weight, being five shillings higher than the price of ordinary Carolina at the time. The *paddy* shipped netted in Demerara \$1 10 per bushel. Some of the crop was used in the colony for feeding horses, being, when crushed, deemed equal to oats for that purpose, and at the then prices considerably cheaper. While a bushel of oats weighs from 40 to 45 lbs., a bushel of paddy weighs 54 lbs.

At the Georgetown Exhibition, in 1851, a sample of rice from *De Kinderen* obtained the prize, and its superiority would seem to have been derived from the circumstance that the water used in irrigating the crop was the muddy water of the Demerara river; while other crops appear to have been dependent on the rain or hush water from the interior. Although these experiments have not been followed up by any systematic attempt to establish rice as a staple, in consequence of the starved condition of our labour market, they have demonstrated that even under ordinary circumstances as to the supply of water, and without any peculiar advantage of locality, one hundred bushels of paddy may be obtained annually, per acre, at a cost of \$40; a sum which includes the expense of preparing the land, of seed, of sowing, weeding, reaping, and thrashing, all the work being done by manual labour. But when a command of water can be obtained, a much larger increase may be expected: and if the cattle labour were applied to the stirring and levelling of the land, and machinery used for thrashing the grain, the expenses would be materially reduced. It has also been established by the *De Kinderen* experiment, that water, slightly brackish, may be used successfully in the cultivation of rice.

Sugar Cane,

(*Saccharum officinarum*.) ¹⁷ 'All we know of the origin of the sugar-cane is, that it was first known in Asia, and that it has not been found wild in any other part of the world; its cultivation has however spread from the Old World to the American continent and islands, where it now forms perhaps the most important vegetable product.

The sugar-cane is a gigantic grass, growing from six to twelve feet high; it is solid, being filled with pith and saccharine juice, and jointed at very short intervals: the panicle, or flower-head, is large, often more than two feet long, elegant and feathery, from the flowers being surrounded with fine long reddish-coloured hairs, whilst the scales of the flower are of a pale rose-colour. The art of the cultivator has originated numerous varieties.

The sugar-cane is a perennial plant, and when ripe is cut down; the canes are then taken to the mills, where they are subjected to great pressure between iron rollers, by which the cane juice is separated; it is then mixed with lime and boiled; by this process it is clarified; thence it is passed through a succession of boilers, and the water is removed by evaporation. When the sugar begins to assume its ordinary granular appearance, it is placed in a large shallow vessel, called a *cooler*, to crystallize. Here the peculiar process called *claying* takes place: a stratum of clay, moistened with water, is laid on the top, and as the water gradually filters through the mass of sugar, it carries with it much of the molasses which discolours it. The

8. Cat Con. from British Guiana to the London International Exhibition 1862.

17 Archer's Botany.

¹⁷ 'process of claying is said to have been discovered by accident: a hen, with muddy feet, having walked over a cooler full of sugar, it was noticed that where the clay from her feet remained, the sugar beneath it was much lighter-coloured. If the molasses is merely separated by draining, the sugar is then termed Muscovado.'

The subjoined sketch of the mode of cultivating the Sugar-Cane in this colony and of the process of manufacturing Sugar, is quoted from a publication entitled "*Demerara after Fifteen Years of Freedom*," by a Land Owner:—

⁸ 'A sugar estate is divided into fields of from five to ten acres in extent by the cross canals, and the method of planting the cane is simple and easy when labour is at command. The brushwood and grass having been cut down and weeded, are piled into rows, six to eight feet apart, across the intended beds into which the field is to be divided. These beds are formed by digging open small drains two feet wide and two feet deep at intervals of every thirty or thirty-six feet across the entire field, beginning within a few yards of the canal, in the centre of the estate, and running to the side draining trenches, into which they empty themselves. The soil from these small drains having been carefully thrown upon the beds, so as to raise and round them off in the middle, narrow banks or ridges of earth are made across them from drain to drain—parallel to, and equidistant between, the rows of grass and brushwood; and in these spaces, between the banks of earth and grass, the canes are planted in line, each line being three or four feet apart, and each cane plant nine or ten inches from the next. The plants are procured by cutting off the tops or upper joints of growing canes into lengths of ten or twelve inches, which are thrust in a slanting direction into the well-stirred ground, and in ten days or so the long grass-like leaves begin to spring from the "eyes" at every joint. These young canes require to be kept well weeded, and mounded about the roots from the ridges of earth or decaying grass on either side of them, which had been previously prepared for that purpose; and this must be repeated as long as there is room for the labourers to pass between the rows, which, according to the season, will be until the plants have attained the age of six or eight months, after which time the spreading of numerous leaves from each stock will have covered the surface of the field with so dense a jungle, as in a great measure to prevent any further growth of weeds.

When about nine months old, the cane throws out its "arrow," a long reed-like stem, surmounted with a tuft of waving downy blossom. At this period the plant is poor and weak, and little more than a mass of water; it soon, however, recovers, and in twelve or thirteen months from the time of planting is considered at maturity, having then, sometimes, attained a length of twenty to twenty-five feet, but more frequently of ten or twelve feet, about as thick as the wrist, and divided into joints like a bamboo. When ripe, the canes are cut down to the very ground, in lengths of three or four feet, and thrown into punts, which are towed along the canal by mules or oxen to the wet dock, at the door of the sugar-mill.

Immediately after cutting, the large quantity of "trash" or dry leaves

¹⁷ Archer's Botany.

⁸ Cat. Con. from British Guiana to the London International Exhibition 1862.

' is rolled clear of the cane stumps, and heaped in rows, there to decay and form a rich manure for the succeeding crop. In a few days the stumps throw out their shoots, and the same routine of cultivation is repeated for twelve months more, any vacant spaces where plants may have missed, being carefully supplied. The canes of the first year are called "plant canes," those of the second and subsequent years being distinguished as "ratoons;" and these ratoons have been known to be produced from the first plant for twenty years and upwards, the canes have been annually cut down, and the stumps allow to shoot again. But this continued reproduction from the same stocks, which is now compulsory on the planter, from the scarcity of labour, of course causes the canes to degenerate, and to yield less abundantly. An acre of newly planted land will give two tons of sugar for the first year, gradually falling off to not more than one fourth of that quantity as the stocks become old; and were there sufficient labour in the colony to admit of the land being re-planted every third or fourth year, there can be little doubt that the present crops would be nearly doubled. The productive power of the greater part of the soil of British Guiana indeed appears to be unlimited. As an instance, it may be mentioned that, on an estate in Essequibo, the return obtained in 1851 from certain lands, which had been properly worked and perfectly drained, amounted to a fraction within four tons of sugar per acre. The processes employed in this colony in the manufacture of sugar are the following:—

The cane-juice is received from the mill into cisterns or boxes, where such a proportion of lime is added as is considered necessary for its proper defecation. It is thence run into a series of cast-iron vessels called "coppers," which are built into brick-work, and heated by the direct action of a single fire in the ordinary manner. In these the juice is as far as possible cleansed by means of skimming, and evaporated down until it has reached that degree of concentration technically known as the "striking point," when it is transferred into shallow wooden vessels, and allowed to crystallize. As an improvement upon this rude process, separate defecating vessels or clarifiers, heated either by steam or by the open fire, have been introduced on the majority of estates, and in some instances vessels in which the defecating liquor is allowed to subside previous to being run into the coppers, have also been used with advantage.

For upwards of twenty-five years vacuum-pans have been in use on some plantations in this colony, and but for the injurious operation of a high duty on the improved quality of sugar thus produced, they would probably have been in very general use. Latterly, however, many have been erected with the best results, the value of the produce thus prepared having been much increased beyond that of ordinary muscovado sugar.

On plantations where the vacuum-pan is used, the process is conducted in the ordinary manner, until the syrup has reached a density of from 25 to 30 degs. of Beaumé's saccharometer, when it is either taken directly into the pan, or is previously filtered. The common bag filter is that generally used, but on some plantations filtration through animal char-

³ Cat. Con. from British Guiana to the London International Exhibition 1862.

⁸ 'coal is used with excellent effect, both improving the quality and increasing the quantity of sugar obtained.

For the separation of the sugar from the molasses on estates where the vacuum-pan is used, it has been customary to employ pneumatic pans, but within the last three years these have in some cases been replaced by the Centrifugal Drying Apparatus. The comparative advantages of the two systems are still matter of dispute.'

The Plantain Tree.

(*Musa paradisiaca*). ⁴ 'The plantain tree is perhaps one of the most useful plants found here. Independent of the beauty of its foliage, the rich broad green leaf, like velvet to the touch, is efficaciously employed in the dressing of blistered and ulcerated surfaces; and when these leaves are dried they make an admirable thatch, or serve exceedingly well for litter for the stable or cattle farm.

The stem of the plantain furnishes a large quantity of serviceable fibre,* from which good paper has been manufactured, some of which can be used for writing, and other kinds for wrapping goods. Excellent cloth and paper have been made at Paris from the plantain fibre.

The fruit is invaluable in a country which, raising no wheat, has to depend upon importations from foreign markets for this staff of life; but the plantain is an admirable substitute; it may be considered the bread of the tropics, and is much esteemed by the negroes, and even immigrants of all classes, who readily adopt the use of it. It grows very readily here, and is cultivated to a considerable extent, in former years almost every estate had its "plantain walk," which generally yielded sufficient for the population it contained.'

⁵ 'The cultivation of Plantains is a very simple process; the land, after being drained, being merely prepared for the reception of the plants by digging holes about 18 to 20 inches deep, in squares of 9 to 12 feet apart, for the reception of the plants. The plants consist of the root of the plantain tree with some two feet of the stem. After the plants are placed in these holes vertically, stem even with the surface, they ought to be tightly rammed all round with earth, so as to prevent water lodging round and rotting them. They generally produce from five to ten suckers, the most forward of which will bear in nine months from the period of planting in rich land; in a poorer soil they will take 12 months to come to maturity. Plantains, to be produced in perfection, require a rich soil; and in such I have known bunches to be cut weighing as much as 80 lbs., with stem, skins, &c.; perhaps about one half of that weight would be fit for food, of a very nutritive quality.

When it is considered that each plant, from its suckers, will probably produce an average of four bunches of plantains per annum, it will be seen how valuable it is an article of food, and that in this colony it is justly termed the staff of life.†

⁸ Cal. Con. from British Guiana to the London International Exhibition 1862.

* From 3,000lbs to 6,000lbs of plantain fibre could be obtained annually from an estate of 400 acres, the value of which would probably be from £100 to £150 per year.

† MacRae's Planters' Manual.

The Banana Tree,

(*Musa sapientum*)⁴ 'is allied to the plantain, but although the fruit is sweeter and more luscious, it is not so nutritious; a bunch of bananas often contains from 160 to 180 fruits, weighing collectively from 70lbs to 80lbs. From thirty to forty plants will grow in a space of little more than 1000 square feet. The fruit may be collected about ten months after the sucker has been planted. The stem yields a large proportion of excellent fibre, suitable to many of the purposes to which flax and hemp are applied.'

⁵ 'Eight or nine months after the sucker has been planted, the Banana begins to form its clusters; and the fruit may be collected in the tenth or eleventh month. When the stock is cut, the fruit of which has ripened, a sprout is put forth, which again bears fruit in three months. The whole labour of cultivation which is required for a Plantation or Banana, is to cut the stalks laden with the ripe fruit, and to give the plants a slight nourishment once or twice a year by digging round the roots. A spot of little more than a thousand square feet will contain from thirty to forty Banana plants. A cluster of Bananas produced on a single plant often contains from one hundred and sixty to one hundred and eighty fruits, and weighs from 70 to 80 lbs. But reckoning the weight of a cluster only at 40 lbs., such a Plantation would produce more than 4,000 lbs. of nutritive substance. HUMBOLDT calculates that as 33 lbs. of wheat and 99 lbs. of potatoes require the same space as that in which 4,000 lbs. of bananas are grown, the produce of bananas is, consequently, to that of wheat as 133 to 1, and to that of potatoes as 44 to 1. The bananas ripened in the hot houses of Europe has an insipid taste, but yet the natives of both Indies, to many of whom it supplies their principal food, eat it with avidity, and are satisfied with the nourishment it affords. This fruit is a very sugary substance; and in warm countries the natives find such food not only satisfying for the moment, but nutritive. Yet weight for weight, the nutritive matter cannot at all be compared with that of wheat, or even of potatoes. At the same time, a much greater number of individuals may be supported upon the produce of a piece of ground planted with bananas, compared with a piece of the same size in Europe growing wheat. HUMBOLDT estimates the proportion as twenty-five to one; and he illustrates the fact by remarking that a European newly arrived in the torrid zone is struck with nothing so much as the extreme smallness of the spots under cultivation round a cabin which contains a numerous family of Indians.

It may be proper to notice here, that the banana is cultivated in this colony but to a very limited extent, and is solely used as a fruit in its ripe state. The plantain, on the other hand, is extensively cultivated, and in its unripe state is the staple and favourite food of the Creole and African population of the colony.'

Among the numerous FRUIT TREES—

The Citrus Awantium

⁶ 'or China orange-tree, as also the Seville, grows in great luxuriance; it rises from twelve to twenty feet in height, distinguished by the beautiful deep green of its foliage; stem upright and ramifying in every direction,

⁴ DALTON. ⁵ Cal. Con. from British Guiana to London International Exhibition 1862.

⁶ N. MARLIN.

forming a regular and beautiful head. The fruit is excellent and may be improved by grafting on the Seville orange stock; but the best is to be obtained by grafting on the pomegranate. The flowers are highly odoriferous, and yield their flavour to rectified spirits by infusion, and to both spirit and water by distillation.

There are varieties also of the common Lime and Lemon, *citrus limon*; but the most elegant of this genus is *citrus tuberosa*, or citron tree, the fruit of which imparts to spirits an agreeable flavour.

The Shaddock,

and Forbidden Fruit are of the citrus tribe. The shaddock is supposed to have been transplanted from Guinea, in Africa, by a Captain Shaddock, whose name it still bears throughout the West Indies. The fruit has all the appearance of belonging to the orange species, and is divided in the same manner by a thin skin, into several quarters; but it is as large as a melon, and of a most agreeable and refreshing flavour, between sweet and acid. The outer coat or skin is extremely thick, of a bitterish taste and a pale yellow, or citron colour, very like, in appearance, to the skin of a lemon. There are two species of the shaddock; the pulp or inside of one is white, that of the other a beautiful pale red: the last is considered the most wholesome. This fruit a European may indulge in with safety; and it is almost the only one in this climate, excepting the orange, that will not injure him on his first arrival. The forbidden fruit is a species of the shaddock, only smaller and more delicate, while the outer skin is less coarse. Its juice and the flavour of the inside are quite delicious in a West Indian climate. The granadilla is another excellent fruit, contained in a soft husk, which is produced by a large passion flower; the husk is filled with a sweet and most agreeable liquid; and the manner of eating it is to cut off one of the ends, and mix up in it Madeira wine and sugar, stirring it all up together; this renders it safe and wholesome for the stomach. It is of the size of a small melon. The *laurus persca*, or avocado, vulgarly called alligator pear, comes to fine perfection here: it is a pulpy fruit, resembling in appearance a large-sized swan's egg; the pulp, or vegetable marrow, as it is called, is enclosed in a light-green papyraceous skin, and contains a large, irregularly-formed seed, that is immediately surrounded by brownish, membranous coverings.

Numerous other delicious fruits grow abundantly in the colony, such as the luscious sapadillo, semiton, marmalade fruit, guava, cashew, mango, pine apple, star apple, pomrose, sour sop, melen, &c. Abundant also are the trees, plants, and shrubs from which valuable medicinal and chemical substances may be obtained, which at present are unheeded and unsought for, and remain as buried riches in the dense forests of the interior. The following are a few of those already known:—

The Indigo Plant,

(*Indigofera tinctoria*)¹ was formerly cultivated in this colony. It thrives well in a moist climate like this, and would be admirably suited for cultivation in the interior and elsewhere. The indigo formerly exported from South America was considered superior in quality to that produced in the

‘‘ East, but, like many other articles of equal value, its culture has been neglected in these latitudes.

The Arnotto Dye,

or Rocou plant (*Bixa orellana*), appears to be indigenous, and is the principal dye with which the Indians paint themselves red on the forehead, cheeks, and head, either for ornament or in accordance with the prevailing fashion. For this purpose small cakes are prepared, like coloured chalks, from the seeds, which are enclosed in rough pods.

The Lana Tree,

(*Genipa americana*), a stately and handsome tree, furnishes a powerful black dye; if the flesh is stained with this pigment, it takes days, if not weeks, to remove it; the dye is yielded by the leaves and branches.

The Logwood Tree,

(*Hæmatoxylon campechianum*), also grows here, and yields the well-known and useful extract.’

Vanilla,

‘‘ Different species of vanilla are natives of Guiana; and it is found in large quantities along the banks of its rivers, and in the wooded districts which intersperse the savannahs. It is well known that it is added to chocolate to give it an aromatic flavour, but it is likewise used for several other purposes in confectionary; and the oily and balsamic substance which the minute seeds possess may be found to have medicinal qualities. Its cultivation can be connected with no difficulties; it needs only to plant the slips among trees, and to keep them clear of weeds.’

The Nutmeg Tree,

(*Myristica moschata*), ‘‘ has been found to grow very well in Trinidad, and would be sure to thrive in a soil and climate so suitable to its cultivation as that of Guiana. Indeed, some plants were lately introduced here, and, if I mistake not, are still flourishing in the grounds where they were placed. A species of wild nutmeg, accawai or waccakai nutmeg (*Acerodictidium canara*), is indigenous to this colony; it is used by the natives as an efficacious remedy in disorders of the bowels.’

The Hya Hya or Cow Tree,

‘‘ is of the species of sapotacea, many of which furnish excellent fruit, and some of them are extremely valuable as timber. The whole of this numerous class contain, in a greater or less degree, a milky juice, and in all probability, the hya hya will be found identical (or a very near species) with the cow tree (Palo de vaca) of Venezuela. It bears a small eatable yellow fruit, of an oblong shape; the leaves are oval, rigid, and lactescent on being broken. It yields abundantly a milky fluid, of a sweetish and rather pleasant taste, also a resinous and albuminous matter, or a kind of elastic gum or caoutchouc.’ In order to have the milk free of curdling particles, take a bottle of hot water in the vessel, allow the milk to flow into this and then convey to your house and use as ordinary milk. This milk used with coffee will be quite as good as if made with cow’s milk.

The tree grows tall, and proportionate in size, but the timber is not reckoned valuable.

The Laurel Oil Tree,

"Trees which belong to the laurel oil tribe are very numerous in Guiana, and are not only important for their aromatic and stomachic qualities, but likewise for the volatile oil which is obtained merely by making incisions in the bark; this oil is used in rheumatic complaints, or in general externally as a discutient, and internally as a diuretic and diaphoretic.

The bark of *Laurus Cinnamomoides* is warm and aromatic. The Mabaina or Amabaina of the natives, or *Casca preciosa* of the Brazilians, is a sweet, aromatic bark which comes from a tree that belongs likewise to the Laurel family. I have no doubt that the tree which furnishes the Sassafras nuts of the London shops (*Laurus Pucheri*) will be found indigenous in Guiana.

The forests of Guiana produce plants which possess powerful febrifugal properties. On the banks which border the river Berbice in the fourth and fifth parallel, the *Quassia amara*, or bitter ash, and further south, the *Portlandia hecandra*, are to be obtained in abundance. Several of the *Anonaceæ*, as *Uvaria febrifuga* (*Frutta de Barra* of the Colombians), are used as a febrifuge. The Indians of the Rupununi set a great value on the bark of a tree which they call Allissau; in the absence of its flowers I considered it to belong to the Bucku tribe (*Diosmæ*). The *Simaruba*, *Tachia guianensis*, *Malpighia febrifuga*, and numerous others, would prove useful for their febrifugal properties.

The violet tribe comprises a plant which furnishes the Ipecacuanha, namely *Lonidina parviflora*. The root of the *Cephaelis ipecacuanha*, found in the damp and shaded forests of the interior, furnishes the best Ipecacuanha. A small creeping plant, a species of *Vandellia*, is used as an emetic by the Indians with great success.

The diuretic and demulcent powers of the Sarsaparilla are well known; and the Sarsa de Rio Negro is most esteemed for that purpose. Guiana possesses several kinds, and the *Duroquaro*, one of the indigenous species, is used with great effect by the Indians. If the *Smilax siphilitica*, which is considered to furnish the best sarsaparilla, should not be found, it might be cultivated with success in British Guiana. The root of the *Pholacca decandra*, *Helicteris Sacarolha*, *Waltheria Donradinha*, are used in siphilitic diseases.

That valuable substance Caoutchouc is yielded by divers trees and plants, viz. a species of fig-tree, several of the family of *Euphorbiaceæ*, and and the hya-hya or milk-tree, which affords a milky secretion, possessing a small quantity of caoutchouc, and has been used as a substitute for milk.

Many trees of the forests of Guiana are famed for their fragrant resinous juice and healing qualities. The balsam copaiva is yielded by the genus *Copaifera*, of which there are divers species in Guiana. I have met frequently in the Camero mountains the species which is said to yield that substance in the greatest abundance. The *Icica carana* produces a substance like gum elemi, the *Icica aconchini* the balsam of aconchi, the *Humirum floribundum* the balsam of umiri, the *Amyris ambrosiaca*, an immense tree, the fragrant resin of conima. The latter tree, called Haiowa or Sepou

by the Indians, is most abundant. The Tonko bean is very fragrant, and possesses a volatile oil, which contains a peculiar principle called coumarin. Several species of *Anoniaceæ* yield likewise a fragrant gum, highly prized by the Indians, and from their flowers essential oils might be extracted. The locust-tree, or *Hymenæa*, furnishes the gum anime. It is found in abundance, and might be used as gum lac. Several species of *Garcinia* as well as *clusia* possess gamboge.

The Dali, a species of *Myristica*, a large and majestic tree, is very frequent along the banks of rivers; its seeds when immersed in boiling water furnish a vegetable tallow, which has been used with effect for the preparation of candles by several colonists.

Most prominent among the vegetable oils is that pressed out of the nut of the crab-wood tree (*carapa guianensis*); it is used in the colony for burning, but at present small quantities are only manufactured by Indians, who anoint their hair with it, and the strength and fine gloss which distinguish it is ascribed to the use of that oil. They press likewise a sweet oil from the fruits of certain palm trees, chiefly from the *Acuyuru* (*Asrocaryon aculeatum*), and Cuenrit palm (*Maxitiana regia*).

The number of woods which furnish valuable dyes is considerable. I allude to the Brazil wood, the fustic-tree, the black dye of the *Lanu* (*Genipa americana*) and *Serada*, the red dye of the *Maparakuni erythroxylum*, different *Malpighiæ*, and the useful dye *Arnatto* or *Roucou*, which is indigenous, and thrives without care*. The *bignonia chica* affords a dye similar to the *arnatto*. The plant possesses it in such abundance, that it exudes like resin when the wood is wounded; it dyes a bright orange. To the same family belongs the manaraballi (*Jacaranda-orati* and *acuti-folia*), which affords an excellent remedy against that dreadful disease, the yaws; a decoction of its leaves is given to the patient inwardly, and he is likewise directed to wash his body in it.

Guiana possesses several trees, the bark of which affords the principle of tanning. The bark of the *aricennia tomentosa*, and a species of *malpighia*, which is abundant on the savannahs in the interior, is much used by the Brazilians for that purpose. The heart of the mora tree is considered as valuable for tanning as oak.

The leaves of some of the *bromeliæ* which grow on the arid savannahs, furnish a fibre, of which the natives make thread and ropes: it is uncommonly strong and durable. The fibres of the *agave vivipara* have been used for the same purpose, and those of the young leaves of the Ita palm (*mauritia flexuosa*) are woven into hammocks, ropes, and baskets, by the Warrau and Arawak Indians: these ropes do not, as at present manufactured, sustain long exposure or damp situations. The cultivation of the Piaçaba palm (*attalea funifera*) might prove of great importance. This palm is indigenous on the Rio Negro and the Cassiquiare; and of its petioles

2. SCHOMBURGK.

* It will scarcely be believed that the *arnatto*, which is so extensively used for colouring, is at present imported from France, via New York, to avoid, like the sugar-grown colonies, the foreign duty. It is an indigenous plant in Guiana; the banks of the Upper Corantyn are covered with it, but there are not sufficient people to render the natural productions of the colony of use.

'a cordage is manufactured, which is extremely light, and floats upon the water, and is more durable in the navigation of rivers than ropes of hemp. It is extensively used in the Brazilian navy, and large quantities are exported to Para, and to many of the West India Islands.'

The Hai Hairy Bush Rope,

is used by the Indians for poisoning fish. (See page 201.) From the

Worali Vine

The Indians prepare a deadly poison; its mode of preparation is thus described by WARETON:—² A day or two before the Maconsi Indian prepares his poison, he goes into the forest in quest of the ingredients. A vine grows in these wilds, which is called worali. It is from this that the poison takes its name, and it is the principal ingredient. When he has procured enough of this, he digs up a root of a very bitter taste, ties them together, and then looks about for two kinds of bulbous plants, which contain a green and glutinous juice. He fills a little quack, which he carries on his back, with the stalks of these; and lastly, ranges up and down till he finds two species of ants, one of them is very large and black, and so venomous, that its sting produces a fever: it is most commonly to be met with on the ground. The other is a little red ant, which stings like a nettle, and generally has its nest under the leaf of a shrub. After obtaining these, he has no more need to range the forest.

A quantity of the strongest Indian pepper is used; but this he has already planted round his hut. The pounded fangs of the Labarri snake, and those of the Connaconchi, are likewise added. These he commonly has in store; for when he kills a snake, he generally extracts the fangs, and keeps them by him.

Having thus found the necessary ingredients, he scrapes the worali vine and bitter root into thin shavings, and puts them into a kind of colander made of leaves: this he holds over an earthen pot, and pours water on the shavings: the liquor which comes through has the appearance of coffee. When a sufficient quantity has been procured, the shavings are thrown aside. He then bruises the bulbous stalks, and squeezes a proportionate quantity of their juice through his hands into the pot. Lastly, the snakes' fangs, ants, and pepper are bruised, and thrown into it. It is then placed on a slow fire, and as it boils, more of the juice of the worali is added, according as it may be found necessary, and the scum is taken off with a leaf; it remains on the fire till reduced to a thick sirup of a deep brown colour. As soon as it has arrived at this state, a few arrows are poisoned with it, to try its strength. If it answer the expectations, it is poured out into a calabash, or little pot of Indian manufacture, which is carefully covered with a couple of leaves, and over them a piece of deer's skin, tied round with a cord. They keep it in the most dry part of the hut, and from time to time suspend it over the fire, to counteract the effects of dampness.'

The Silk Grass Shrub,

³ called by the Indians curra, bears some resemblance to the aloe, but is much smaller; its leaves rise in clusters immediately from the root, five feet

'in length, with indented edges, protracted into prickly points. The inner substance from the leaf consists of a number of small strong white fibres, running longitudinally, which the Indians extract by means of a small loop of cord fastened to a post, through which the leaf is drawn with a jerking motion; this takes off the outer green substance, and leaves the fibres ready for twisting into cord, which is done after drying in the sun. When the cord is made, which the Indians do with remarkable neatness, it makes excellent bow strings, as it possesses extraordinary elasticity and strength.'

The Mahoe,

(*Thespesia populnea*, Corr, or *Hibiscus elatus*, Lia. ?) * 'This Shrub, which bears a bright primrose flower, like that of Cotton, grows naturally and abundantly throughout the Colony; and on the banks of rivers, or in damp situations, it rises into a tree. On the banks of the Canje Creek, Berbice, it attains the height of 40 feet. The wood is not much used. From the inner bark of the young trees and shoots is obtained by maceration, a valuable fibre.'

Maize, or Indian Corn,

(*Zea Mays*), † 'Indian Corn, or Maize, grows very readily in this colony, and might be cultivated to a very great extent, but this is not the case, and the colonists are under the necessity of importing an expensive and often inferior article; the cause of this is the universal evil of this country, namely, the want of labour. It is occasionally grown on estates, and may be raised along with the young sugar cane, as it does not appear to injure the latter; as it grows much faster, the crop of corn could be taken off before the canes had attained to any size. In separate fields, two, and often three crops of corn may be raised in one year.

The Indians carry on the cultivation of this useful plant, but in a very imperfect manner, and barely sufficient for their own moderate wants. It is grown by them on the high lands of the river Pomeroon, 110 miles distant from the sea, and in many other places perhaps much further inland. As many as twelve barrels of shelled corn may be easily obtained from an acre of land, with scarcely any culture, the labour of planting, occasional weeding, and gathering the corn alone being required, and demanding very little labour. The maize grown here commands a higher price in the colonial market than that imported from the United States of America. The maize raised by the Indians in the interior is considered superior in general to that grown on the coast lands. It appears to be indigenous in many parts of the colony, and no soil is better suited for its cultivation than that met with here.

The Guinea Corn, or Indian Millet,

(*Sorghum vulgare*), might be cultivated to a much greater extent than at present is the case. Samples of it have been sent to the Industrial Exhibitions in England and America, and it has been suggested as a green forage crop for other countries. There are several varieties of it met with here, known as the two-coloured, the drooping, the panicked yellow-seeded.

Cassava.

* ‘The Cassava or Cassada, of this country are of two kinds, and appears to be indigenous. The sweet cassava (*Junipha loeflingi*) is a common plant found in gardens, about plantations and villages, and on nearly every Indian settlement, where it is cultivated as a valued edible product. It is eaten roasted, or mixed with other food, and is called by the natives “Bussuli.”

The Bitter Cassava (*Junipha munihol*) is likewise commonly found throughout the colony, and although a poisonous plant, is converted by simple means into a pleasant and nutritious article of food. The roots are cleansed, scraped, and grated upon a board studded with small sharp fragments of stone, somewhat like coarse sand, and fastened to it by a resinous substance. This simple kind of grater is called by the Indians “Simary.” The grated pulp is next put into a long tube, made of some kind of reed, generally the “Itiritti,” and through this cassava squeezer, or “Matapi” as it is termed, the juice is pressed out by forcibly drawing or lengthening the tube, the sides of which contracting, presses powerfully upon the cassava pulp, and effectually squeezes out the bitter and poisonous juice. The meal, or cassava flour, is then dried in the sun, or over the fire, sifted through the “Warrambi” sifter, made of the ita palm, and is subsequently made into large, flat, circular cakes, which are baked on iron plates, or by other means.

The Arrowroot,

(*Maranta arundinacea*), is a common plant, and furnishes a starch equal to that from any other part of the world. Specimens, the produce of this colony, have been already sent to Europe, and excited considerable attention. The arrowroot of this colony has been found to yield about 20 per cent. of starch. The sweet and bitter cassava furnish a still larger proportion, the former about 26 per cent., the latter about 24 per cent.

Yams.

There are several varieties, such as the buck yam, the common yam, the Guinea yam, the Barbadoes yam, and other species, which may also be said to grow wild in the fertile soil.

The Papaw Tree,

* ‘has a graceful appearance, and presents a striking figure in contrast with the surrounding bushes and trees. It grows to the height of twenty feet, its stem is hollow, and supports a head, not of branches, but of large leaves, at the end of very long foot-stalks. The fleshy fruit, which is of a dusky orange-yellow colour, and about the size and shape of a small melon, grows suspended upon the naked trunk, just below the leafy head. The leaves and fruit of the tree, till ripe, abound in an acrid milky juice. The fruit, when fully ripe, is eaten with pepper and sugar; and when the half-grown fruit is properly pickled, it is little inferior to the pickled mango of the East Indies. Meat washed or rubbed with the acrid milk of the unripe fruit, is thereby made tender. The writer found the leaves a very attractive bait for catching fish, by throwing a large quantity of them into the pond constructed for that purpose at the river’s side. It grows spontaneously, and begins to bear fruit within ten months, never ceasing when once it has begun. Ripe and green fruit and blossoms are seen at the same time.’

The Sweet Potatoes

(*Convolvulus batatas*)⁴ are of native growth, and the demand for them is much greater than the supply. The same may be said of the numerous species of eddoes (*caladium*), and Indian kale, or spinaches, ground nuts (*arachis hypogea*) and other similar vegetables.

The Ochro

(*Hibiscus esculentus*) is a favourite plants, commonly cultivated by the negroes and others for its useful properties. The young capsules make a delicious and nutritious soup; the leaves are found cleansing and detergent for the hair, and are believed to add to its growth and beauty.

The Sorrel Plant

(*Hibiscus sabdariffa*) is a pretty and useful shrub, the capsules of which are used in making a favourite creole beverage called "sorrel drink," by fermenting a sweetened infusion.⁵

The Ginger Plant,

(*Zingiber officinale*), thrives exceedingly well in the colony; it is superior to that produced from the East, and both raw and preserved ginger are occasionally exported in small quantities.

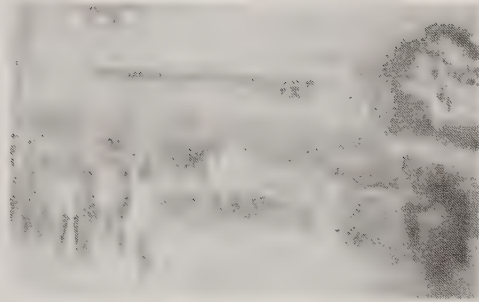
The Pepper.

The varieties of Capsicums, yielding the well-known Cayenne pepper, are astonishing; fine specimens, preserved in dilute acetic acid, have repeatedly been sent to Europe and America, and have been highly appreciated. They are met with in every garden, of various sizes, shapes, and colours, but are all pungent, and are much used and esteemed to flavour soups, meats, and other food.

Pickles, composed of capsicums, sliced papaw, mountain cabbage, shalots French beans, are also prepared, and occasionally exported, or consumed in the colony.

The ordinary pepper (*Piper longum*) is well suited to the soil of many parts of the country. It has already been cultivated in the neighbouring colony of Cayenne, whence it has been exported. The plant, a trailing vine, might be raised along with the nutmeg and spice trees, and yield as abundantly and profitably as in the Eastern Archipelago.⁶

⁴ DALTON.



CHAPTER XII

MISCELLANEOUS.—An account of the Governor's Visit to the Tumulus at Warramuri Mission, Rio Moracca, with particulars respecting the Excavation—Names of all the Commanders and Governors of the Colony—The Legislature—Public Officers and Judicial Establishments—Religious Denominations—Corporations—Public Institutions—Estimates and Ways and Means for 1866—List of the Colonies of the Colony, and where Situated—Names and Salaries of Public Officers.

THE excavation of the Shell Mound or Tumulus, Warramuri, an Indian Mission, upon the Rio Moracca, excited much interest during the early part of the present year. With the object of obtaining information regarding its origin and the interesting relics found in the excavation, His Excellency the Governor, (FRANCIS HICKES, Esq., C.B.), and a party consisting of His Lordship the Bishop, the Hon. J. LARCE SMITH, Attorney-General, the Hon. CHRISTOPHER BAGOT, Controller of Customs, W. B. POLLARD, Junr., Colonial Civil Engineer, the Rev. W. G. G. AUSTIN, Inspector of Schools, C. P. AUSTIN, Esq., Private Secretary, Dr. SIMER, W. H. CAMPBELL, Esq., and G. W. BENNETT, Esq., who were joined at the Mission by the Venerable Archdeacon JONES and the Rev. Mr. BURT; left Georgetown on the morning of the 20th January, 1866, in the Revenue Schooner *Petrel*, Captain WALKER.

The following account is taken from a little book written and published by a gentleman of the party, and entitled, "The Governor's Visit to the Shell Mound at Warramuri":—"The *Petrel* anchored off Moracca before 5, p.m., and was fairly within the waters of the little known Warrow country, a vast tract of swampy land extending to the Oronoque and abounding in Eta palms, from which the chief food of the Indians of that district is derived. Close to the entrance of the river lay snugly moored the Civil Engineer's boat, which had been sent down in advance with a party of shovelmén to excavate the mound; and as far the eye could reach treaded an interminable line of forest, silent and sombre in the darkening gloom of twilight. But the next morning presented a more animated spectacle. The boat of the worthy Superintendent of the district, Mr. McClintonck, was seen putting off from the shore, with her pennon floating gaily to the breeze, followed by a fleet of canoes filled with Indians who paddled with all their might in an eager race towards the schooner, which was soon surrounded by these simple denizens of the forest. The necessary preparations were soon made and a hasty breakfast despatched, and then the whole party, at 8.30., disembarked for the Moracca in a perfect procession of boats. In the first Mr. McClintonck escorted the

* Governor, the Bishop, and Attorney-General, while the rest of the party followed in the large Mission boat, and the Indians and baggage brought up the rear. The mouth of the Morueca was entered about 9.15, and as the expedition proceeded on its way towards Warramuri, many a canoe dropped quietly into the ranks from some shady nook, where its crew had been waiting to see the Governor pass. About 12, the Mission came suddenly into view, and here the scene was most striking. At the landing place, the hill, which is of pure white sand, slopes gently down to the water's edge, and is approached by a canal from the river, at this time crowded with innumerable woodskins and canoes. Drawn up in two ranks five or six deep, with a broad path between them, stood a dense throng of Indians of all the tribes in the Essequibo, considerably more than 1,800 in number. The chiefs were ranged in a semi-circle at the landing with the Archdeacon and the Rev. Mr. BRETT (who had preceded the Governor's party by an inland journey through the Tapacooma Lake), accompanied by the excellent catechist of the Mission, Mr. DUNCAN CAMPBELL, while beside them a number of Indians, armed with fowling pieces, formed a sort of guard of honour. The Governor landed in full uniform, and such of the party as were officers of militia also donned their military habiliments, and as His Excellency stepped upon the sand, he was received with a *feu de joie*, and the most enthusiastic tokens of welcome. To them the visit of a Governor was an event never to be forgotten, and many had come from great distances to see His Excellency. As far as could be ascertained the numbers of the different tribes present on this interesting occasion were about as follows:—

Warrows, 700; Caribs, 500, Arrawaaks, 350; Accaways, 250;

And there were also representatives of an almost unknown tribe, the Mai-Ong-Kong's. It seemed to be considered *de rigueur* by these simple people, that every man, woman, and child should shake hands with the Governor, and His Excellency good humouredly endeavoured to satisfy them. It was amusing to note the solemnity with which most of them went through the operation, and when it came to the women's turn, the eagerness with which they brought their little ones to shake hands with the great man was quite diverting. Most would march up and present their tiny palms with the utmost gravity; but, occasionally, some hapless little wretch on being ushered into the Vice-Regal presence by his fond parent would give a yell of terror and lie down beneath the legs of the surrounding throng, only, however, to be instantly fished up again and thrust back by a chorus of indignant matrons. After the conclusion of this somewhat fatiguing ceremony, the Governor and party proceeded to the tumulus, where operations were at once commenced with the full consent of the Indian tribes assembled. The mound is about 25 feet above the level of the sand hill on which the settlement stands, and 500 feet in circumference. It is composed chiefly of small black and white Periwinkle shells, and it is worthy of note, that these as well as the other shells with which they are interspersed, such as clams, conchs, crabs, and various kinds of Bivalves, and even oysters (which last are now almost wholly unknown on the coasts of Guiana,) are all edible, and such as would be likely to be consumed by a race of savages living on the

* The Governor's Visit to the Shell Mound.

* 'sea shore. Sir JOHN LUNNOK, in his work on Pre-Historic Times, mentions that "the four species which are the most abundant in the shell mounds (of Denmark) are—

The Oyster, *Austrea edulis*, L.; the Cockle, *Cardium edule*, L.; the Mussel, *Mytilus edulis*, L. and the Periwinkle, *Littorina littorea*, L. All four of which are still used as food for man," (p. 179). And with respect to the Warramuri mound, the same observation applies that has been made in the case of the Danish mounds, namely, that the shells consist of species which do not live together, nor require the same conditions, and would not, therefore, be found together alone in a natural deposit (p. 173). These facts appear to determine the artificial character of the mound, as distinguished from raised beaches, which in the words of the accomplished writer before referred to, necessarily contain a variety of species; the individuals are of different ages, and the shells are, of course, mixed with a considerable quantity of sand and gravel." (*Ibid.*) On digging down into the mound, quantities of organic remains were discovered, large shells, apparently for the most part clams, crabs, fish bones and scales, charcoal, and fragments of what appeared to be red pigment in considerable abundance. Many more human remains were also brought to light, an axe or hatchet of a seemingly not very hard kind of stone, but of which nothing similar is now known in the surrounding country, and some substances resembling arrow heads, which, on being subsequently examined by the aid of a microscope, proved to be the teeth of some large fish, not improbably a shark. The bones and skulls were all crushed and shattered like those previously discovered by Mr. BRETT, and as there is an Indian tradition that cannibal tribes formerly lived on the coast, who used to fracture the bones of their victims in order to extract the marrow, the question arises—may not this tumulus mark the site where these extinct man-eaters used to hold their horrible feasts? It is a singular coincidence that in the Danish mounds all the bones of animals found are in like manner fractured. Sir JOHN LUNNOK states that "in every case, the bones which contained marrow are split open in the manner best adapted for its extraction" (p. 181); and again, "It is evident that marrow was considered a great delicacy, for every single bone which contained any was split open in the manner best adapted to extract the precious morsel" (p. 189.)

With respect to the tradition of cannibalism on this coast, it is curious that the locality corresponds pretty closely with that part of the South American Continent, namely, the neighbourhood of the Oronoque, where the man-eating savages are described as being accustomed to cross over to Robinson Crusoe's Island to devour their victims according to Dr. FOE's tale. In his account Friday is portrayed as an Indian. "His hair was long and black, not curled like wool. * * * The colour of his skin was not quite black, but very tawny, and yet not of an ugly nauseous tawny, as the Brazilians and Virginians and other natives of America are, but of a bright kind of a dun olive colour, that had in it something very agreeable, though not very easy to describe," (vol. 1.

* The Governor's Visit to the Shell Mound,

* (256.) The Island itself is stated to be at the mouth "of the mighty river Oronoque," and Crusoe is made to say, "I asked Friday a thousand questions about the country, the inhabitants, the sea, the coast, and what nations were near: he told me all he knew with the greatest openness imaginable. I asked him the names of the several nations of his sort of people, but could get no other names than Cariba; from whence I easily understood, that these were the Caribbees (Caribisee?) which our map place on that part of America which reaches from the mouth of the river Oronoque to Guinea (Guiana?) and onwards to St. Martha" (p. 256). It is true that in his second voyage he says that "the continent which I thought I saw from the island I lived in, was really no continent, but a long island, or rather a ridge of islands reaching from one to the other side of the extended mouth of that great river; and that the savages who came to my island, were not properly those which we call Caribbees, but Islanders, and other Barbarians of the same kind, who inhabited something nearer to our sides than the rest" (Vol. 2. p. 34.) This, however, does not affect the point, and it is surely no strained hypothesis to suppose that De Foe derived his notion of cannibals feasting on their prisoners taken in war from the accounts given by adventurers who had followed RALEIGH's track to Guiana, and that the tale embodied the popular opinion in the time of ANNE of the habits of the Indian tribes living in that distant region of the new world. Indeed, RALEIGH himself speaks of a nation of cannibals, "in whose chief town, called Acamacuris, is a continual market of women, who were bought by the Arwacas (Arawaaks?) for three or four hatchets a piece, and sold by them to the West Indies;" and in the expedition that he fitted out in 1595 under Captain KEYMIS, that navigator enumerates the rivers "Pawrooma (Pomeroon), Moruga (Morucca), Waini, and Barima." The subject is one of great interest, and since attention has been attracted to it, there is no doubt that other similar tumuli exist in the Colony. From researches made by order of Mr. BRETT, a shell mound is reported up the Waini river, another near the Accavini creek, a tributary of the Pomeroon, and a third on the Siriki creek, also a tributary of the same river. This last is said to be oblong in shape, and larger than the tumulus of Warramuri, and all are believed to be composed of the same description of shells. Another mound has been discovered at Pln. *Skeldon*, in Berbice, which, it is to be hoped, will be carefully examined, and near it a stone axe head was found some time ago, while there is said to be a considerable tumulus at the entrance of the Abari creek, in the middle of a savannah. It would be of great importance to the cause of science if these tumuli could be opened by competent persons, with the view of throwing some light upon the habits of the primeval mound-building nations, of whom traces are to be found in so many parts of the world. The skulls brought to light at Warramuri are small but of extraordinary thickness, and the most perfect one was remarkable for the absence of forehead, and for what appeared to be projecting rims round the eye holes. It is interesting to note that the skeletons discovered in the Danish shell mounds are those of a race of small

* The Governor's Visit to the Shell Mound.

*“men, and as described by Lubbock, “the skulls are very round, and in many respects resemble those of the Lapps, but have a more projecting ridge over the eye,” (p. 188). Still more remarkable in its coincidence is the description of the skulls very recently found in a mound near Torpichen, in Linlithgowshire, which are said to be in the possession of Professor Duns of New College, Edinburgh, and with respect to which it is stated that “the character of the crania gives the chief interest to the discovery: they have evidently belonged to full-grown individuals, yet both are comparatively small; the bones of the eye brows are largely developed, and those of the forehead sharply recede.” (*Illustrated London News*, 24th February, 1866.) This account closely tallies with the appearance of the skulls found at Warramuri, and the fact is worthy of attentive consideration by Ethnologists.

The shades of evening brought the labours of the excavators to a close, and the moon rose upon a scene of singular beauty. Perched high upon a hill, with the river Morueca at its base, and the forest stretching away to the sea, all around the Settlement the watch fires of the Indian gaily twinkled; while on the broad plain of sand, in front of the Mission House, little red-skinned children gambolled in flocks, making the air resound with their merry laughter. One of the party had brought with him a box of Pharoah's serpents, and strolled down to the Indian quarter to exhibit them. It is impossible to describe the astonishment which greeted their appearance, as coil after coil unwound itself; first a shrill cry of surprise, and then it gradually swelled into a roar from the surrounding crowd as the serpent lay complete. Perhaps the next greatest wonder to them was ice, of which some had been brought up. A piece would be broken off and handed round the circle, which each would solemnly lick and pass on to his next neighbour, until the lump disappeared in a manner to them wholly inexplicable. But in a short time all was hushed, the tired travellers sought their hammocks, and silence reigned supreme. In every direction hundreds of watch fires blazed surrounded by dusky forms, and above the moon rode in unclouded majesty, in the midst of the starry Firmament, recalling forcibly to mind those familiar but immortal lines, which have been so tersely rendered by the Laureate,—

—————“Many a fire before them blazed
As when in Heaven the Stars about the Moon
Look beautiful, when all the winds are laid,
And every height comes out and jutting Peak
And Valley, and the immeasurable Heavens
Break open to their highest, and all the Stars
Shine, and the Shepherd gladdens in his heart,
So, many a fire between the ships and stream
Of Xanthus blazed before the Towers of Troy.
A thousand on the Plain; and close by each
Sat fifty in the blaze of burning fire.”

Very early the next morning the excavation of the tumulus was resumed, and the works were continued until 4 in the afternoon. The section opened was cut down to its base upon the sand, and quantities of human remains were found, reaching to the very bottom of the mound.

* The Governor's Visit to the Shell Mound.

* 'Their being discovered at this distance from the surface, upwards of twenty feet below the top of the mound, would seem to negative the idea that these skeletons could have been interred in the ordinary course of sepulture. It was remarkable that in many instances, the thigh bones and those of the leg, and also the bones of the fore arm and arm were doubled up on each other; and in no single case did a hand or portion of a hand remain attached to the fore-arm, although finger bones were found scattered about in all directions. The same shells, red substance in lumps, and fragments of charcoal, continued throughout the section, and a selection of specimens was made for transmission to England, in order that they may undergo full scientific examination. The works were personally superintended throughout by His Excellency the Governor, who together with the Bishop, the Arch-deacon, Dr. SHIER, and others, evinced the greatest interest in the proceedings. Before daybreak that same morning, a detachment of the party started for the Monte Rosa, the Roman Catholic Mission up the Morueca, in the neighbourhood of which a number of Spanish Indians are settled. At about 8, they reached captain CALITKO's settlement, which is much more comfortable than the generality of Indian places, and is well stored with coffee, chocolate, and fruit trees. Here they met a party of Indians on their way down to visit the Governor in their war paint, their bodies a bright red, and their faces striped in alternate lays of black and red. Shortly after they came upon an affecting sight. Close to the water side, under a venerable Palm, a poor Indian was tenderly finishing a little coffin for his infant grandchild, and the mother sat besides it looking the very picture of woe. The man was evidently intent on his task, and was making his loved one's narrow home with smoothed crabwood plank; and the whole scene, the towering forest trees, the rapid river, and the little coffin on the ground, was one not easily to be forgotten. About $\frac{1}{2}$ past 9 Santa Rosa was reached, and from its summit fine views of the surrounding country rewarded the travellers for their journey, but the settlement itself has a forlorn and deserted aspect. On their return the party stopped at RAPHAEL the Indian's place, and a little mound in the very centre of his house shewed that his melancholy task was done. He was remonstrated with for burying the body in such a place, but the probability is that the whole family intended forthwith to desert the spot and to move elsewhere. The mourning mother was lying in her hammock close to the grave, silent and utterly unmindful of all that passed around her. "Her heart is grieving for the child," said poor RAPHAEL simply.

On their return to Warramuri the Santa Rosa party found that presents were being distributed to the Indians, who were drawn up in ranks, four deep, and each received according to his degree. To the men were given knives, fish hooks, shot, gunpowder, salampores, and shirts. To the women scissors, looking glasses, beds perfumery, (of which they are very fond) cloth, &c., while due care was taken of the boys and girls, who all appeared immensely pleased. Then commenced the Indian games upon the plain in front, which formed a complete *campus martius*. About one

* The Governor's Visit to the Shell Mound.

* ' hundred contested in archery, and the flights of white-tipped arrows were like snow-flakes in the clear blue sky, when they launched their bolts simultaneously, as appeared to be the favourite mode, each man knowing his own arrow. Foot races were also run with spirit; but the game that excited the most interest was the *Ila Ila* fight, called in Warrow, *Isahi*, being a friendly combat with large shields made of *Eta Palm*. The object in this encounter is by sheer strength to thrust down the opponent, and some of the champions exhibited remarkable suppleness and dexterity. Amused spectators of the sports, Indian boys sauntered about in couples after the manner of bosom chums in the playing fields of Eton; while slim graceful maidens, with sweet-scented flowers wreathed in their glossy hair, moved in groups with arms entwined round each other's waist, for all the world like English school-girls—so true it is, that "one touch of nature makes the whole world kin."

In the evening merry strains were heard from one part of the camp—Jack had brought his fiddle from the schooner, and light-hearted youths and maidens were tripping it in innocent mirth upon the moon-lit sands. In another, the sound of singing rose in solemn accents from the Accaway quarters, and on silently proceeding thither, an interesting scene presented itself. The house was crowded with Accaways and a number of young Indians of both sexes, who had been taught at the Mission, were singing, "Angels from the Realms of Glory," a most intelligent young Accaway, named *Phulir*, giving out each verse of the hymn. Then he took up his Bible, and began to read from the 7th chapter of *Matthew*, interpreting as he went along to his countrymen in their own language. With much fervour he read to them—"What man shall there be of you, whom if his son ask bread, will he give him a stone? Or if he ask a fish, will he give him a serpent? If ye then being evil, know how to give good gifts unto your children, how much more shall your Father which is in Heaven give good things to them that ask him?" The affection of the Indians for their children is extreme, and this appeal seemed to come home to their hearts with extraordinary force. Earnest murmurs of assent showed how deep an impression this passage had made upon them, and that it had sunk into their minds with all the freshness and power of a new idea, and *Phulir* enlarged upon the theme with a sincerity which evidently had a great effect upon his audience. What a wonderful contrast did such a scene present to that which must have marked the time when the builders of the mound inhabited this region! Then the vast tract of swampy alluvial forest stretching away beneath the cliff must have been all submerged, and the sounding billows of the Atlantic must have rolled to the very base of Warramuri, which we may presume was then an Island, looking to the configuration of the neighbouring country. Then a stunted squalid horde of savages must have ranged along the shore, living chiefly on marine mollusca, but probably cannibals, and after a victory over some neighbouring tribe, gorging themselves in unnatural orgies with the flesh of their prisoners, and crunching like wild beasts the marrow from their bones.

* The Governor's Visit to the Shell Mound.

* ' And now from this same spot arose the Hymn of Praise, and the simple, gentle race who now peopled the forest, were learning with child-like docility of the wondrous love of the Great Father of All for his children of the whole human race.

Early the next morning, while the moon was still shining bright and clear, all the party were on the alert, ready for a start. The Indians mustered again in force to attend His Excellency's departure, being chiefly men and lads; for the water was dotted with the dusky forms of mothers bathing their children; and while the baggage was being stowed away, many canoes put off on their return to the Waini and Baraima and other remote streams whence they had come. It was amusing to watch the gravity with which little mites of boys and girls would step into the frail buckshells and take their places, without disturbing the balance of the boat the slightest degree; then the wife would tuck up the inevitable dog under her arm, a gaunt, long-eared animal, but with a keen nose for a Labba or Accouri, and he, too, would quietly take his post at the prow with his front paws on the edge of the gunwale, there to stand immovable until the next landing place; and last of all, *pater-familias* in a lap and a necklace of Peccary's teeth, would shoulder his paddle, stem into the stern, and noiselessly push off on his return to his distant forest home.

All being in readiness, His Excellency the Governor and party re-embarked before 7, under a general salute from all the Indians who had guns, and many cordial farewells, and after a rapid run down the river, reached the schooner, which got underway as soon as the tide suited, and after a delightful passage returned to Georgetown about 2 the next morning.'

LETTER FROM THE REV. W. H. BRETT TO ARCHDEACON JONES.

Account of the first opening of the Tumulus at Warramuri Indian Mission, River Moruwa.

Trinity Parish, Essequibo, 4th January, 1866.

MY DEAR ARCHDEACON,—Having long entertained the opinion that the shell mound standing on the precipitous edge of Warramuri sand reef was of artificial formation, (being either a tumulus of similar nature to the kitchen middens of Denmark and the shell heap recently examined, I believe, in Caithness, or an ancient sepulchral barrow,) and finding few persons inclined to agree with me in either supposition, I resolved to settle the question by opening it.

The tumulus, as you know, is not far from the bank of the Moruwa, at the commencement of the immense swampy district inhabited by the Waraws and other Indian tribes, which extends northwestward to, and beyond the delta of the Orinoco.

The mound is rather more than 20 feet in its present height, gracefully rounded, and with a base of probably 100 feet in diameter. The reef on which it stands is (like many others found a few miles inland) composed of white sand, mixed with peat or decayed vegetable matter, but, unlike the mound, is destitute of organic remains, as far as our researches have extended.

The whole, both reef and tumulus, were covered with forest trees until the establishment of the Mission in 1845.

Mr. Campbell the resident Catechist and lay-reader, commenced operations, at my request, in the beginning of November, by a cutting from east to west of twenty feet in width at the top to allow a gradual narrowing in the descent.

The whole mass of the mound, as far as we have been able to dig, consists chiefly of black and white striped periwinkle shells, similar to those found on the sea face, with those of crabs, mussels, clams, whelks, &c. &c., in finite number and variety; the first named (i.e. the periwinkle) greatly exceeding all the rest in quantity; mingled with these are the remains of vegetable fishes and land animals, the whole presenting the appearance of being the refuse of innumerable meals of some race in former days, when these shell fish (many kind of which are now scarcely known on our muddy shores) must have abounded, and Warramuri ridge, now separated by 10 or 12 miles of alluvial deposit from the sea, was probably a promontory or an island.

The shells imbedded in the light mould are seen everywhere on each side of the cutting in

thin layers, which resemble in their closeness the coats of an onion, and indicate, by slight streaks or variations of colour, where each successive deposit was applied to.

We were unable to go below 7 or 8 feet in depth. The Indians refused to dig deeper, being unwilling to disturb to any greater extent the human remains which began to be met with about 4 or 5 feet from the surface.

Those bones were found in 5 or 6 places; not stretched out in their horizontal or perpendicular positions, but the remains of each person crushed and huddled together in a manner impossible to describe. A fragment of an elbow bone, for instance, is found tightly fixed between the spinal vertebrae, and many different parts are welded together as it were in the strangest confusion. I have brought away a small box of the most singular specimens of these human remains; also, two or three specimens of (apparently) the bones of large fishes, two lumps of hard-red red paint, of what the Indians call *serah*; four or five heads of small feathers, or rather anion *tumukwaka*, which must have been inserted in bundles of heavy wood; a broken stone with a sharp edge, which may have been used as a knife, and a strange rock or pebble, of a soft fine-grained heavier than the bones, which was unfortunately broken in a four pieces in being dug up. This latter has puzzled all who have seen it. I think it may, perhaps, be the fossilized fragment of the tail of a gigantic ray, but leave it to others to decide on its nature.

No heads nor any kind of ornament were found, neither gold, silver, copper, iron, nor any kind of metal. Small fragments of granite and other stones, such as children at play might throw about, were met with here and there.

I may add here, that since the above specimens were dug up which I have forwarded to you Mr. Campbell has sunk a small pit several feet deeper. He procured from it the same kinds of shells, fish bones, &c., as were found above, a other shattered skull and other human bones, and among other little matters, five more lumps of the "red paint," which he has sent me. The feeling among the Indians, of which I wrote, has compelled him to cease from further excavation.

The finding of these last human remains so far below the others, and the irregular positions and unequal depths at which all were found, seem to show that they must have been placed there at different periods while the mound was in course of formation.

Having thus detailed the main facts of the discovery, I ought, perhaps, to make no further remark on the subject. But there is one question which naturally suggests itself, and which has been asked by all who have heard of the above facts or seen the relics—"How came those human bones to be there buried in the heap of shells?"

Judging merely from what we have at present discovered, it appears to me that two conjectures might be advanced in reply—

1st. They may have been interred many ages after the tumulus had been formed; either immediately after death, or at a long preservation of the skeleton above ground, according to the ancient custom known to have been practised by the Indian tribes now existing.

The latter supposition is strengthened by the lumps of red colouring matter found near them, (for the Indians, when preparing skeletons of their relatives, or even painted them red,) and it would account for the diseased condition, and perhaps for the intermingling, of the various parts of each skeleton, but it would hardly account for their irregular positions and depth in the mound nor for their broken and shattered condition when found. The child's skull and jaw, you will see, has been smashed in by a violent blow, apparently on one side, and all the other skulls were in fragments, of which the few I have selected were the largest. The man's skull is about $\frac{1}{2}$ of an inch thick, yet it had been shattered like the rest. Many of the bones were broken in the process of digging, but the edges thus formed are light in colour, while the original fractures which are far more numerous, have their edges dark, and are distinguished at a glance.

2nd. The cannibalistic race who formed that mound may have had a cannibal feast occasionally, and placed the bones and fragments with their other refuse.

The Indian's tradition is, that the man-eating tribes always broke their victims' bones to eat out the marrow, and they are inclined to believe that these bones were fractured for that purpose; but none of them know anything of the history of the mound in question, or can throw any light on the subject. It was probably the work of no existing tribe, but of a race long since extinct.

I merely throw out the above suggestions, without presuming to decide. We must search deeper. The examination of the remaining portion of the tumulus by His Excellency the Governor will, I am persuaded, do much to render intelligible this, which seems the earliest chapter of the history of the human race in this part of the world. I venture to predict, that similar remains will be found, if sought for, in similar portions, viz., a meadsore inland, where the alluvial deposits, our present swamps, join the rising lands, the original shores of the Atlantic.

I Remain, my Dear Archdeacon,

Faithfully yours,

W. H. BRETT,
Superintendent of Indian Missions.

LETTER FROM PROFESSOR OWEN TO SIR FREDERICK ROGERS, BART., WITH REFERENCE TO MR. BRETT'S LETTER.

Shewell & Sons, 1 Park Lane, 14th February 1866.

SIR FREDERICK.—I have the honour to acknowledge the receipt of the letter of the 14th February, enclosing a copy of a *Deputé* (No. 17, 5th volume, 1865) of the *Gazette* of British

Guiana, transmitted to me by direction of Mr. Secretary Cardwell. I have read with much interest Mr. Brell's concise and clear account of the opening of the Tumulus at Waranuri, British Guiana. It gives valuable additional testimony to the similarity of the habits and procedures of the earliest known races of mankind in different and remote parts of the world.

At the present phase of research into the obscure period of human history, such explorations as that which have been begun in the shell-mound at Waranuri, are of peculiar value, should be carried out, and merit encouragement and aid in their prosecution.

For the full fruition by science of such explorations, it is requisite that the exact nature of things found and deemed worthy of note should be made out; for that purpose specimens of the different kinds of shells should be transmitted to the British Museum for determination. The knowledge so acquired might throw light on the kind and degree of change of coast line, or other evidence of geological action to which the locality of the mound may have been subject. Still more requisite is the transmission of the more problematical bones, such as the "perfected rod," or the purpose of such tests and comparisons as a National Museum affords for the discovery of their precise nature.

It would be desirable, also, to ascertain the species of mineral which had afforded the mound makes the material of their stone implements, and to compare the shape, size, and other character of their "batches" with those of the mound-making and other prehistoric people of Europe.

I am unwilling to press for the transmission of the human remains discovered and recognised as such by the native diggers, deriving the gain to science, the chief unlikely to compensate for the harm that might ensue from endangering in the minds of the Indians a sense of injury, through indifference of the mission to their feelings, which do betoken a kind of religious veneration for the resting places of ancestors and some dim sense of the sanctity of sepulture. The funeral re-interment of such remains, in the presence of the Indian congregation might, rather, be advisable. The foregoing observations do not apply to human crania that may be discovered by the mission under other circumstances in tumuli or mounds.

The remarks on the state of the human bones are instructive, and all such are desirable. From the analogy of Mr. Brell's, with previous observations on this point, I incline to his second hypothesis as the probable explanation of such dislocated and fractured states of the skeletons.

It would be desirable to know whether any of the "long bones" or the limbs had been found entire, or whether others, like the "elbow bone," had been found fractured. The medical officer of the mission (if there be one) might be offered the opportunity of examining the human remains, and be requested to report on them. To any of the evidences of the nature and history of the artificial mounds or tumuli of British Guiana which may be transmitted to the British Museum, prompt and due attention will be given. With the facts so ascertained, I am of opinion that the information transmitted in the Despatch of the Governor of British Guiana (No. 17, 8th January, 1866) would be highly acceptable to men of science; I venture to ask permission of Mr. Secretary Cardwell to communicate the same, or such part as he may deem proper, to the "Royal Society," and I beg to return respectful acknowledgments of the favour of the copy of this very interesting information.

I have, &c.,

(Signed)

RICHARD OWEN.

SIR FREDERICK ROGERS, Bart.

THE REV. W. H. BRIT TO MR. BENNETT.

Trinity Parsonage, Essequibo, June 16, 1866.

MY DEAR SIR,—I beg to thank you for the interesting sketches of the great assembly of Indians who met the Governor at Waranuri Mission in February last; and to furnish you (as you request) with a brief outline of further discoveries in that quarter.

The number of shell mounds discovered and examined in the Mission District of the Pomerou and Morouca up to the present date is four.

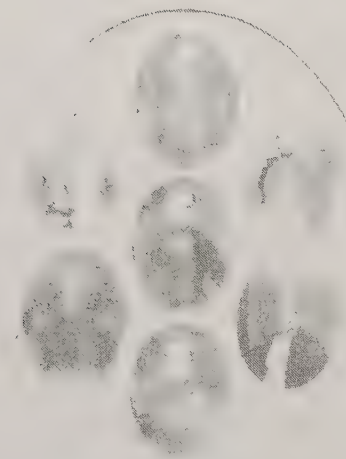
I. That at Waranuri has become well known and need not be noticed here. Some explorers whom I sent out for the purpose, after one or two unsuccessful journeys, discovered two other mounds in February last.

II. One of these is at a place called Akawini, and is very difficult of access by reason of the swamps. It stands in a low marshy position, is flatter and broader than that at Waranuri, and very different in its external appearance, though its contents are the same.

III. The other discovered by that party is a very large oblong mound. Roughly measured it was found to be about 240 feet by 90, and probably 20 feet high. This also, like the other, stands on the edge of a swamp, adjoining higher land. It is at first, a small tributary of the Pomerou.

IV. Soon after, a fourth was found at the other Indian Mission under my superintendence, which is also on the Pomerou river, and named Calucaburi. This mound has been formed against the side of (not upon) the Mission hill; and being covered with thick coffee bushes, had escaped observation; though I had myself resided for several years almost upon its edge, and erected the Mission house and chapels within a stone's throw of it. This last, though of considerable size is smaller than the other shell heaps further inland.

These mounds are all similar to that at Waranuri, and contain the same sad evidence of barbarous habits. The human relics in them are a ruinant, and in the same condition as those formerly described; the skeletons being dislocated and huddled together; the crania in fragments;



and the long bones all cracked open. No doubt exists in the minds of those who have seen them so unceremoniously mingled with the shells other broken bones, that they have been equally with them, the relics of meals, and cast into the common heap of refuse. It is probable that the people who formed those mounds were settled all along our shores. If so, other remains of the same kind will be brought to light. The four I have mentioned above are, indeed, all that have been examined at the present date; but others are reported to exist in various places and will, doubtless, be examined in due time.

Our existing Tribes know nothing of the race that formed those shell and bone heaps. They were certainly inferior in civilisation to any of our Indians at the present day.

I Remain, my Dear Sir,
Yours Very Sincerely,

W. H. BRETT.

G. W. BENNETT, Esq.

List of the Commanders and Governors of the Colony.

COMMANDEURS OF LISSEQUEBO.

1834.		J. V. de Goss
1670.		Hendrick Roll; appointed by the Kamer Zeeland
1671.		Hendrick Roll; confirmed in office by the new General West India Company
1676.	March 31.	Jacob Hara
1678.	July 25.	Abraham Beckman
1680.		J. P. De Jongh
1690.	Nov. 2.	Samuel Beckman
1707.	Dec. 10.	Peter van der Heyden Resen
1710.	July 21.	Laurens de Heere
1720.	Oct. 12.	Herman Gelskerke
1742.	April.	Laurens Storm van S'Gravesande

DIRECTORS-GENERAL OF THE TWO RIVERS.

1751.		Laurens Storm van S'Gravesande
1772.	Nov. 2.	George Hendrick Trotz
1781.	Oct. 17.	Lieutenant-Colonel Robert Kingston
1782.	Feb. 10.	Count de Kersaint
—	July 15.	Marquis de Lusignan
—	Sept. 15.	Count de Kersaint
1783.	Jan. 20.	General de la Perrière
1784.	March 6.	J. Bourda, Provisional Governor
1785.	Feb.	Jan L'Espanesse.

GOVERNORS OF BERBICE.

1666.		Matthys Bergenjaar, Commandeur of Berbice
1669.		M. Crynsee, ditto.
1674.		
1684.		Heer Lucas Condrio, ditto
1733.	April 22.	Bernhard Waterham
1749.	April 8.	John Andries Lossner
—	May 7.	John Frederic Colier
1755.	Dec. 5.	Handrick Jan van Ryswick
1760.	April 4.	Wolfert Simon van Hogenheim.
1765.	Sept. 6.	Johannes Heyligar, Jun.
1768.	April 7.	Stephen Hendrick de la Sablonière
1781.		While in the hands of the English and French, Berbice had the same Governors as Demerary and Essequibo
1784.	May.	Peter H. Koppiers
1793.		Abraham van Batenburg

258 COMMANDERS AND GOVERNORS OF THE COLONY.

1802.	Dec.	Provisional Government, composed of two Members of the Council, appointed by the Batavian Republic
1803.	Oct. 1.	Lieut.-Col. Robert Nicholson, Acting Governor
1804.	Aug.	Abraham van Batenburg, re-appointed
1806.	Dec.	Lieut.-Col. Nicholson, Acting Governor
1807.	Sept.	General James Montgomery, Governor
1809.	March	William Woodly, ditto
1810.	Jan.	Major-General Dalrymple, Acting Governor
—	Dec.	Robert Gordon, Lieut.-Governor
1812.	June.	Brigadier-General John Murray, Acting Governor
1813.	Feb.	Robert Gordon, resumed
—	Dec. 13.	Major Grant, Acting Governor
1814.	June.	H. W. Bentinck, Lieutenant Governor
1820.	Nov.	Major Thistlewayte, Acting Governor
1821.	Jan.	Colonel Sir John Cameron, ditto
—	March.	Henry Beard, Lieutenant Governor
1825.	March.	Sir B. D'Urban, Acting Governor
1826.	July.	Henry Beard, resumed.

GOVERNORS OF THE UNITED COLONY OF DEMERARY AND ESSEQUEBO.

1765.		Jan Cornelis van der Heuvel, Commandeur of the R. Demerary
1789.	Aug. 18.	A. Backer
1793.	March 31.	W. A. Baron van Grovestins
1795.	May 5,	Provisional Government, consisting of two Members of the Court of Policy, in rotation.
—	June 29:	Anthony Beaujon, continued in office by the English on the capture of the colony
1802.	Dec. 3.	Anthony Meerteens, appointed by the Batavian Republic
1803.	Oct. 1.	Lieut.-Col. Robert Nicholson
1804.	Aug.	Anthony Beaujon
1805.	Oct. 19.	Brigadier-Gen. James Montgomery
1806.		H. W. Bentinck
1807.	May 9.	Brigadier-Gen. James Montgomery
—	Sept. 19.	Colonel Nicholson
1808.	June 25.	Lieut.-Col. Ross
1809.	April 8.	Major-Gen. Dalrymple
—	May 20.	H. W. Bentinck
1812.		Major-Gen. Hugh L. Carmichael
1813.	May 12.	Lieut.-Col. Edward Codd
—	May 17.	Brigadier-Gen. John Murray
—	Aug. 24:	Colonel Codd, acting <i>vice</i> Murray, appointed to Berbice
—	Dec. 9.	Major-Gen. John Murray, resumed
1815.	July 26.	Colonel Codd, acting <i>vice</i> Murray, gone to Islands
—	Oct. 3.	Major-Gen. John Murray, resumed
1824:	April 26.	Major-Gen. Sir Benjamin D'Urban, Lieutenant Governor

GOVERNORS OF BRITISH GUIANA.

1831.	July	Major-Gen. Sir Benjamin D'Urban, Governor
1833.	May	Lieut.-Col. Courtenay Chambers, Acting Governor
—	May	Colonel Sir Charles Felix Smith, ditto
—	June	Major-Gen. Sir James Carmichael Smyth, Lieut.-Governor
1836.	Dec.	Major-Gen. Sir James Carmichael Smyth, Governor
1835.	May	Sir Lionel Smith, ditto
—	June	Sir James Carmichael Smyth, ditto
1838.	March	Major W. N. Orange, Acting Governor
—	March	Colonel Thomas Bunbury, ditto
—	June	Henry Light, Esquire, Governor
1840.	Dec.	Sir Henry M'Leod, ditto
—	Jan.	Henry Light, Esquire, resumed

1848	May	Wm Walker, Esquire, Lieutenant Governor
1849.	Feb	Henry Barkly, Esquire, Governor
1863	May	William Walker, Esquire, Resumed
1864	March	Philip Edmund Wodehouse, Esquire, Governor
1867	July	William Walker, Esquire, Resumed
1868	May	Philip Edmund Wodehouse, Esquire, Resumed
1861	May	William Walker, Esquire, Resumed
1862.	January	Francis Hincks, Esquire, C B, Governor
1866.	May	Robert Miller Mundy, Esquire, Lieutenant-Governor

LEGISLATURE

The Legislature consists of the Court of Policy, Financial Representatives, and College of Electors

COURT OF POLICY

The Governor as President, with Five Elective, and five Official Members, form the Court of Policy. The Official Members are—

The Government Secretary	The Receiver-General
The Attorney-General	The Auditor-General
The Comptroller of Customs	

FINANCIAL REPRESENTATIVES

Demerara Returns two Members—(one for the County, one for the City of Georgetown)
 Essequibo " two Members
 Berbice " two Members—(one for the County, one for the Town of New-Amsterdam)

The Members of the Court of Policy and Financial Representatives form the
 COMBINED COURT

THE COLLEGE OF ELECTORS.

County of Demerara returns one, and City of Georgetown two members.
 " Essequibo " two Members
 " Berbice " one, Town of New-Amsterdam, one member

COURTS OF JUSTICE, &c

The Supreme Civil and Criminal Courts, presided over by a Chief Justice and two
 Puisne Judges

The Inferior Civil Court, presided over by one Judge
 Criminal Court, presided over by one Judge and three Justices of the Peace
 Petty Debt Courts, presided over by the Police Magistrate in Georgetown,
 and in the Rural districts by a Stipendiary Magistrate

The Stipendiary Magistrate's Courts are held in twelve Rural Districts

PUBLIC OFFICES.

The principal Public Offices are, the—

Government Secretary's	Post Office
Receiver General's	Immigration Office
Registrar's	Colonial Civil Engineer's
Administrator-General's	Auditor-General's
Provost Marshal's	Colonial Book-keeper's
Custom House	

RELIGIOUS DENOMINATIONS

Church of England	Independent Congregational Dissen-
Church of Scotland	ters
Roman Catholic Church	Methodist Free Church
Presbyterian Missionary Society	Methodist Episcopal Society
Wesleyan Church	Plymouth Brethren.
London Missionaries	

CORPORATE BODIES, PUBLIC INSTITUTIONS, &c., &c.,

Town Council	Hand-in-Hand Mutual Guarantee Fire
Board of Superintendence New-Am-	Insurance Company
sterdam	Board of Education
Colonial Bank	Central Board Villages
British Guiana Bank	Central Board of Health
British Guiana Savings' Bank	Board of Prisons
Demerara Railway Company	Pilot Establishment
Royal Agricultural and Commercial	Colonial Hospitals
Society of British Guiana	Alms' House, and Leper Asylum,
Natural History Society	Orphan Asylum, and School of In-
Georgetown Athenæum	dustry
Berbice Reading Society	Board of Guardian of the Poor
Bishop's College	Commissioners of the Lamaha Canal
Queen's College Grammar School	

ESTIMATED EXPENDITURE FOR THE YEAR 1866, AS SANCTIONED BY THE COMBINED COURT.

Annuities, Gratuities, and Superannuation Allowances	...\$	28,266 93
Expenses of Justice	...	30,440 67
Ferries and Steam Navigation	...	50,000 0
Harbours	...	5,340 0
Hospitals	...	97,580 0
Militia	...	8,324 0
Miscellaneous	...	39,066 54
Police	...	145,890 91
Poor	...	75,310 0
Post Office	...	14,560 0
Public Printing	...	4,240 0
Prisons	...	72,115 50
Public Accounts	...	16,530 0
Public Roads and Bridges	...	5,000 0
Revenue Establishments	...	91,934 0
Schools	...	67,895 0
Immigration—(one third whole cost)	...	171,543 64
Public Buildings and Works	...	120,029 0
{ Civil List	...	119,418 56
{ Ministers of Religion	...	80,200 0
{ Public Debt	...	169,856 0
TOTAL		\$ 1,432,140 75

WAYS AND MEANS.

Balance Available from 1865	...	...	41,795 06
General Imports	...	690,000 0	
Less	...	40,000 0	650,000 0

Wine and Spirits	100,000	0
Rum	260 000	0
Beacon and Tonnage	20,000	0
Retail Spirit Licences	100 000	0
Other Licences	45 000	0
Establishments under Government	10,000	0
Fees	25 000	0
Fines and Seizures	20,000	0
Interest	10 000	0
Taxes	15,000	0
Superannuation	12 000	0
Stamps	5,000	0
Miscellaneous	5,000	0
TOTAL	\$1,438 795	6

Names of Plantations and where situated.

Essequibo.

1 Better Success	11 Henrietta	21 Hoff Van Aunich
2 Devonshire Castle	12 Anna Regina	22 Cullen
3 Hampton Court	13 Reliance	23 Perseverance
4 Windsor Castle	14 Mainstay	24 Golden fleece
5 Sparta	15 Land of Plenty	25 Zoig
6 Fair Not (aban)	16 Aberdeen	26 Johanna Cecilia
7 Cobue Grove	17 Columbia	27 Ouderneming
8 Linn (abandoned)	18 Alliance	28 Huis t Dieren
9 La Belle Alliance	19 Taymouth Manor	29 Vilvoorden
10 Richmond	20 L'Union	30 Aurora

31 Spring Garden

Tiger Island

32 Hoff Van Holland	33 Hamburg	34 Sophtenburg
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Wakenam Island

35 Good Success	41 Zeelandia	47 Mariouville (aban)
36 Sans Souci	42 Mooi Firm	48 Domburg
37 Belle Mano	43 Caledonia	49 Arthurville
38 } Friendship & Sarah	44 Maria's Pleasure	50 Maria Johanna
39 }	45 Amersfort (aban)	51 Palmyra
40 Bank Hall	46 New Bendorff (aban)	

Hog Island

52 Endeavour	53 Johanna
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Leguan Island

54 Cranefield & Amsterdam	58 Plenheim	62 Waterloo
55 Richmond Hill	59 Enterprise	63 Success, New Osterbeek
56 Clairmont (abandoned)	60 Belfield	and Wes-Avalgheld
57 Retriever	61 Maryville	64 Henrietta

West Coast Demerara

65 St Christopher	72 Zeeburg	80 Hague
66 Philadelphia	73 Utilingt	81 Blankenburg
67 Vergevoeren	74 Stewartville	82 La Jalouse
68 Thien da Vanden	75 Lamora	83 Windsor Forest
69 Zeelugt	76 Groenveldt	84 Waller's Delight
70 Met-en-Meerzoig	77 Edinburgh	85 Haarlem
70a De Kinderen	78 Anna Catharina	86 Nouvelle Flanders
71 De Willen	79 Cornelia Ida	

West Bank Demerara River

87 Vroed-en-Hoop	90 Schoon Ord	91 Wales
87a Half of Ponderoyen	91 La Glange	93 Vriesland
88 Malgve Tout	92 Names	96 Vive la Force
89 Versailles	93 Belle Vue	97 Glasgow

<i>East Bank Demerara River.</i>		
98 Garden of Eden (aban)	101 Herstelling	104 Rome and Houston
99 Great Diamond	102 Providence	105 Ruimveldt
100 Farm	103 Peter's Hall and Eccles	106 La Penitence
<i>East Coast Demerara.</i>		
107 Thomas	115 Vryheid's Lust	124 Nonpareil
107A Kitty	116 Montrose and Felicity	125 Enterprise
108 Bel Air	117 Le Reservoir	126 Emoro
109 Turkeyen	118 Success	126A Paradise
110 Cumming's Lodge	119 Chateau Margot	127 Cove and John
111 Industry	120 La Bonne Intention	128 Hope, including Lowlands and Dochfour
112 Ogle	121 Mon Repos	129 Cloubrook
113 Goedverwagting	122 Lusignan	130 Bee Hive
114 Better Hope	123 Annandale	
	131 Greenfield	
<i>West Bank Mahaica Creek.</i>		
112 Spring Hall	134 Helena	136 La Bonne Mere
133 Good Hope	135 Belmont and Supply	137 Melville
	138 Cane Grove	
<i>Mahaicony Creek.</i>		
	139 Farm	
<i>West Coast Berbice.</i>		
140 Profit	142 Bath	144 Cotton Tree
141 Foulis	143 Hope and Experiment	145 Blairmont
	146 Balthyock	
<i>West Bank Berbice River.</i>		
	147 Standvastigheid (aban.)	
<i>East Bank Berbice River.</i>		
148 Mara	150 Highbury	152 Everton and Belle Vue
149 Ma Retraite	151 The Friends	153 Providence
<i>Left Bank Canje Creek.</i>		
154 Smythfield	155 Lochaber	
<i>Right Bank Canje Creek.</i>		
156 New Forest (aban)	158 Adelphi	160 Rose Hall
157 Goldstone Hall	159 Reliance	161 Canfield
<i>East Coast.</i>		
162 Prospect	163 Smithson's Place	
<i>Corentyne Coast.</i>		
164 Albion	165 Port Mourant	166 Eliza and Mary
	167 Skeldon	

PUBLIC OFFICERS AND SALARIES.

	<i>Salary.</i>
His Excellency Francis Hincks, Esq., C.B., Governor ...	... \$ 24,000
His Excellency Robert Miller Mundy, Esq., Lieut.-Governor ...	... 9,600
Austin, The Right Rev. W. F., D. D., Bishop of Guiana...	... 12,000
Beaumont, Jos., His Honor, Chief Justice ...	... 960
Ahrens, C., Bandmaster ...	... 2,400
Allison, Rev. J. J., Rector St. Swithin's Parish ...	... 1,500
Allison, Dr. A., Assistant Surgeon to Colonial Hospital ...	...
Altham, Dr. J., Health Officer, Berbice, paid by fees ...	...
Austin, Rev. F. W., Curate St. George's Parish ...	... 1,440
Austin, Rev. Wm., Rector St. John's Parish ...	... 2,400
Austin, Rev. W. G. G., Inspector of Schools ...	... 3,000
Austin, Charles, P., Clerk Government Secretary's Office ...	... 1,050
Bagot, Christopher, Comptroller of Customs ...	... 4,800
Baird, J. F., Stipendiary Magistrate ...	... 3,360
Beets, R. C., His Honor, First Puisne Judge ...	... 7,200
Bell, Rev. Thomas, Minister St. Catherine's Parish ...	... 2,400
Bennett, G. W., 1st Clerk Colonial Bookkeeper ...	... 2,000
Bethune, Alex. M., District Commissary Taxation ...	... 1,500
Bhose, Rev. E. B., Missionary to Indian Immigrants ...	... 1,440
Black, Henry, Clerk in Post Office ...	... 720
Bolton, Inspector Police ...	... 1,400

NAMES AND SALARIES OF PUBLIC OFFICERS.

263

Bouine, Thos, Registrar, Berbice paid by fees	
Howden, Wm James, Training Master Bishop's College	1,000
Brathwaite, N L, Aidwaiter	1,000
Bratt, Rev W H, Rector Trinity Parish	2,400
Bristow, W., Aidwaiter	1,000
Bronkhorst, Rev H V. P., Cooite Minister	960
Brunell, John, Police Magistrate, Georgetown	4,800
Burrows, A. A., Inspector of Poor, Secretary Poor Law Board	3,320
Burrows, A. A., jr, Clerk in Receiver-General's Office	1,090
Burrows, W H A, Aidwaiter	800
Bury, F M, Revenue Officer	1,500
Butt, Rev G H, Curate, St. Luke's	1,440
Broadhead, D., Stipendiary Magistrate	3,360
Blake, J H, Clerk to Stipendiary Magistrate	720
Bean, I S, Clerk to Stipendiary Magistrate	720
Cameron, E H, Government Secretary	
Cameron, D. A G M, County Gnd, Essequibo	730
Chalmers, Cuthbert, Crown Surveyor	480
Christian, Rev M, Curate St. Patrick's, Berbice	1,440
Christians, J L, Aidwaiter	1,170
Colbeck, J R, Clerk in Colonial Bookkeeper's Office	1,500
Cornelius Cornelius, Clerk in Immigration Office	960
Coistorphan, C Aidwaiter	1,000
Cox, Nicholas, Inspector-General of Police	4,200
Cramer, D S, Surgeon to Berbice Jail and Police	730
Cuckow, J P, Clerk to Stipendiary Magistrate	720
Cronin J, Sworn Clerk Registrar's Office, Berbice, paid by fees	
Crucker, E W K, Out door Sup. of Aidwaiters	2,400
Crosby, James, Immigration Agent-General	4,800
Dalgetty, Rev J B, Presbyterian Minister, Georgetown	2,000
Dalton, E T B, Postmaster	3,480
Dillon, E. G H, Sworn Clerk and Notary Public	2,400
Dillon, Dr. Chairman Poor Law Commissioners	1,980
Daly, John, jr, Stipendiary Magistrate	3,360
Dampier, P E, Stipendiary Magistrate	3,360
Des Voeux, Geo Wm, Stipendiary Magistrate	3,360
Darrell, N T, District Commissary of Taxation	1,500
Donnelly, Rev G W, Assistant Curate	1,440
Duff, Rev R, Presbyterian Minister, All Saints, Berbice	2,000
Duffy, Jos David, Medical Officer, Leper Asylum	720
Dugan, T B, District Commissary of Taxation, River Berbice	1,500
Dunn, P, Pro Sergeant and Sergeant Major	720
Davis, Darrel N, Clerk Immigration Office	
Edgill, J M, Clerk to Stipendiary Magistrate	1,200
Edward, Joseph, Clerk to Stipendiary Magistrate	720
Fernal, Rev T, Chaplain Penal Settlement	1,440
Fennell, Thomas, Aidwaiter	1,412
Ferguson, Rev A, Presbyterian Minister, St. Luke's	2,400
Firth, H A, Sub Immigration Agent	1,500
Fisner, Richard, Immig Agent at Sierra Leone, paid by fees	
Fox, Rev Wm, Incumbent of Christ Church	2,080
Fox, Rev Geo, Principal Queen's College	2,040
Fox, Geo W P, Clerk in Government Secretary's Office	600
Fowler, J M, Town Agent and Bookkeeper of Penal Settlement	960
Fowler Wm, S, Revenue Officer	1,500
Frazer, I D, Stipendiary Magistrate	3,360
Frazer, Hugh, District Commissary of Taxation	1,500
Frazer Alex, Aidwaiter, Berbice	800
Freeman, Rev John, Curate, St. Michael's	1,440
French, Matthew, Clerk to Police Magistrate	1,000
Fitzgerald, T 3rd Clerk to Police Magistrate	800
Fuge, F E, Revenue Officer and Sec. Central Board of Villages	1,500
Fausel, J, Customs Department	600
Gallagher, D M, First Sub Immigration Agent	2,080
Gilbert, D T, Clerk to Stipendiary Magistrate	960
Gordon T R, Sub Col Bookkeeper and Sub Comp of Customs, Berbice	2,000
Gore, A D, Assistant Government Secretary	2,880
Grant P A J, Superintendent Rivers and Creeks	2,000
Greenstade, J T, District Commissary of Taxation	1,500

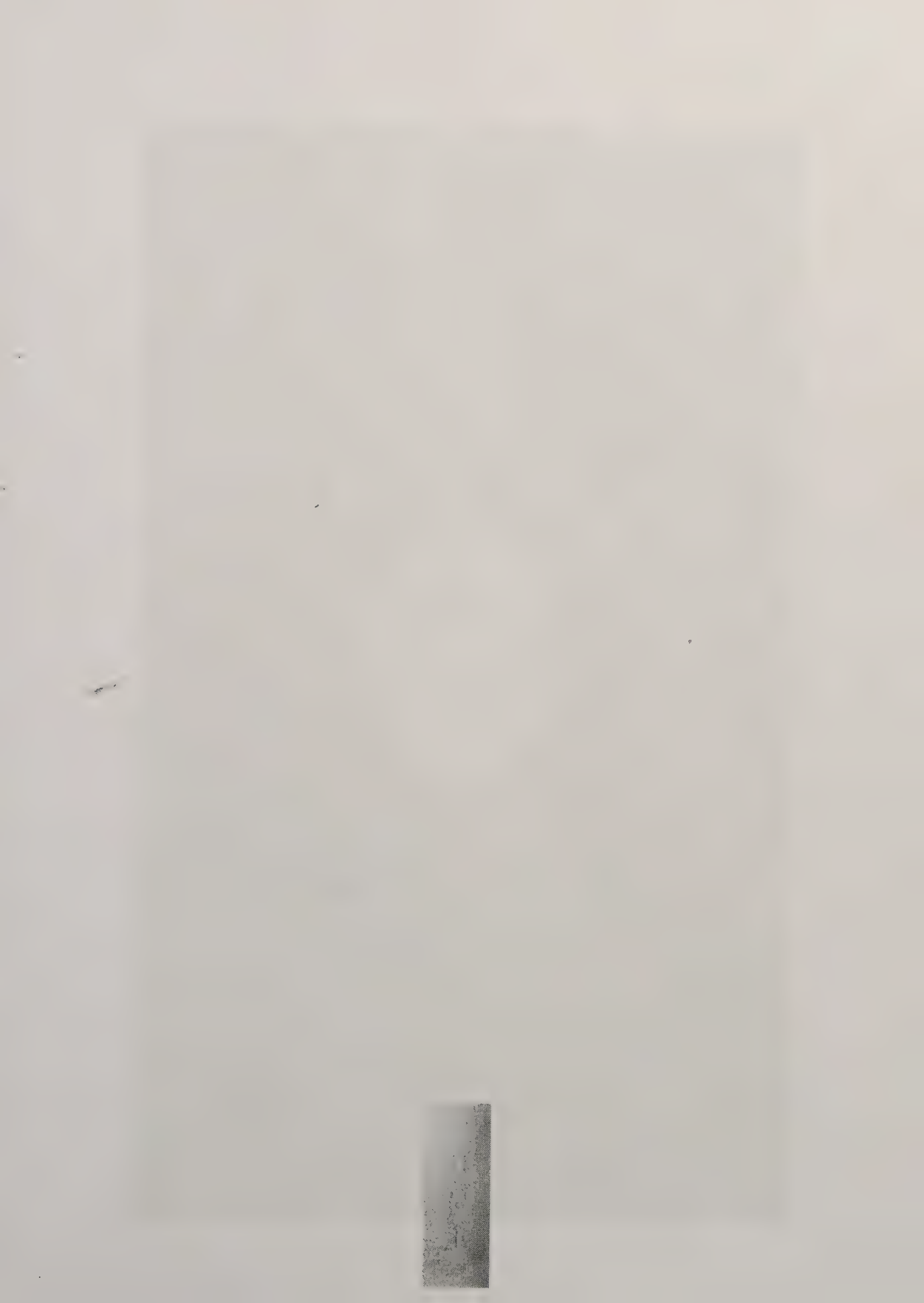
Hackett, Dr. J., Surgeon to Barbice Hospital	2,400
Hancock, Chas. Fred., 2nd Clerk and Locker and Aidwaiter	1,200
Hancock, J. A., Clerk in Custom House	1,000
Harris, S. R., District Commissary of Taxation	1,600
Harris, Wm., Locker and Aidwaiter	800
Harris, T. C., Secretary and Treasurer Board of Health	480
Heather, G., Keeper, of Cayoey Jail	700
Hecketh, R., Immigration Agent at Rio Janeiro, Brazil	
Hill, Sigismund T., Adjutant-General Militia	1,440
Hillis, R. T., Curate, St. James'	1,440
Hillis, Thomas, Jr., Assistant Sworn Clerk	1,750
Hitzler, J. S., Registrar of Demerary and Essequibo	4,000
Holmes, Sir W. H., Provost Marshal, paid by fees	
Hubbard, A. T., Aidwaiter	1,200
Hubbard, Thos., Clerk and Locker, Custom House	1,000
Huggins, H. C., Stipendiary Magistrate	3,360
Humphreys, Wm., Stipendiary Magistrate	3,360
Huskie, Rev. J., Presbyterian Minister, St. Clements	2,400
Hutson, Dr. Henry, Surgeon of Georgetown Jail	2,000
Hamilton, Charles B., 4th Clerk Col. Receiver-General's Office	600
Houghton, H. P., 2nd Clerk Immigration Department	600
Ibbott, J. T., Clerk Bonded Warehouse	1,440
Indach, R. W., Crown Solicitor	720
Inglis, W. R., Colonial Receiver-General	4,800
Iskenius, W. P., First Clerk Custom House	2,000
Jansen, J. P., First Clerk Colonial Customs, Barbice	960
Jeffrey, W. J., Stipendiary Immigration Agent, Calcutta	4,800
Johnson, Samuel, Clerk and Interpreter Immigration Office	720
Jones, Venerable H. H., Archdeacon of British Guiana	4,320
Jugmohun Sing, Interpreter, Immigration Office	360
Kerr, Claude, Superintendent Penal Settlement	3,000
King, F. O., Asst. Sworn Clerk, Registrar's Office	1,320
King, Henry, Steward of Hospital	1,000
Kinnison, Rev. J., Officiating Presbyterian Minister, All Saints	2,400
Killekely, H. A., Clerk to Stipendiary Magistrate	960
Knight, Wm., Keeper County Gaol, Demerara	2,600
Lathbury, Rev. C. E., Curate	1,440
Laurie, R. S., Wharfinger Colonial Bonded Warehouse	600
Leacock, Joseph, Sub-Commissary of Taxation	1,500
Le Gall, Wm., Clerk in Govt. Secretary's office	1,440
Lillie, Rev. Gordon, Presbyterian Minister St. Mary's	2,400
Mitland, Rev. D., Officiating Minister St. Mark's	2,000
Mangot, Dr. E. A., Surgeon General	3,500
Manning, Rev. S., Curate, Trinity	1,440
McAnlay, A., Clerk in Book-keeper's Office	1,200
McClintock, W. C. H., Supt. Rivers and Creeks, Pomeroun	2,400
McSweeney, John, Stipendiary Magistrate	3,360
McClintock, Rev. A., Presbyterian Minister St. James'	2,400
McGuffie, Rev. S., Presbyterian Minister St. Saviour's	2,400
Massiah, F., Clerk Colonial Bonded Warehouse	800
May, Rev. H. J., Rector St. Peter's	2,400
McCartens A., Clerk Custom House	1,200
Milne, L. F., Clerk to Stipendiary Magistrate	720
Milner, Rev. T. B., Curate St. Paul's	1,440
Morgan, Rev. Chas., Curate St. John's	1,410
Murray, F., Inspector Police Force	1,200
Norton, Bernard Gustavus, Second Puisne Judge	7,200
Obermuller A. F., Clerk in Col. Book-keeper's Office	1,800
Olton Henry, Clerk in Custom House	1,640
Olton Chas. M., Assistant Sworn Clerk Registrar's Office	840
Ottobrein J. H., Marshal	1,860
Oudkerk Gerard, Colonial Book-keeper	2,880
Oudkerk, G., 5th Clerk Col. Book-keeper's Office	600
Oudkerk Geo. O., Clerk in Civil Engineer's Office	600
Oudkerk E. L., Accountant, Marshal's Office	900
Olton, O. C., Usher to the Court of Policy	800
O-Tye-Kim, Chinese Missionary	1,440
Peritz Rev. J. A., Rector St. Patrick's	2,400
Pile F. A., Keeper of New-Amsterdam Jail	900
Pitcairn R. N., Superintendent of the Alms' House	600
Plummer H. P., Stipendiary Magistrate	3,360
Pollard W. R., Auditor-General	4,800
Pollard W. B., Colonial Civil Engineer	3,360

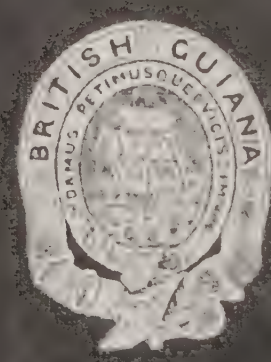
Pollard, J. H., Surgeon Poor	960
Preeg G. A., Armourer	720
Roberts W. F., Dispenser Colonial Hospital	1,000
Rodgers, J. H., Clerk at Her Majesty's Gaol	700
Scott Dr. S., Health Officer	1,500
Salmon J., Inspector of Police	1,400
Seon Wm., Clerk Police Magistrate's Office	2,500
Sheffield R., Immigration Agent at Madeira, paid by fees	
Shier Dr. David, Inspector of Estates' Hospital	4,800
Smith Hon. J. L., Attorney-General	6,250
Smith, W. F. H., Solicitor General	1,440
Smith Rev. David, Rector St. Matthew's	2,400
Smith Wm. McKenzie, Disp. & Steward, Barbice Hospital	1,200
Smith W. T., First Clerk in Receiver-General's Office	2,400
Steele Thomas, Clerk in Police Establishment	1,200
Straker Rev. O. J., Rector St. Michael's	2,400
Straker, J., Commissary of Taxation	1,500
Succetham A. J., Aidwaster	1,400
Shand, James C., Clerk to Stipendiary Magistrate	720
Schmidt, J., Clerk Immigration Office	600
Tanner Rev. A. S., Curate St. Sidwell's	1,440
Turner E. H., Aidwaster	800
Thomas Dr. Leuch,	2,400
Townsend G. I., Deputy Postmaster, Barbice	1,200
Tucker L. G., Ass't Receiver-General, Barbice	2,800
Van Holst F. A., Aidwaster, Barbice	800
Van Kinschot W., Accountant Registrar's Office	2,000
Vaughan J. T., Superintendent Rivers and Creeks, Barbice	2,800
Veecock, J., English Master Queen's College	1,440
Venes Rev. W. T., Curate St. Saviour's Barbice	1,440
Vesey N. I., Harbour Master	2,400
Walker G. R. H., Aidwaster in charge of Rev. Schr. Curlew	1,000
Walker J. N., Aidwaster in charge of Revenue Schooner	720
Ware W. H., Supernumary Magistrate	3,300
Warren Lewis, District Commissary of Taxation	1,500
Warren S. B., 1st Clerk and Chief Warden Penal Settlement	1,000
Watson H., Adm. General British Guiana	4,800
Watson E. H., District Commissary of Taxation	1,500
Webber Rev. R. L., Incumbent St. Philip's	2,000
Webber Rev. W. J. B., Rector St. Paul's	2,100
Wells Geo. P., Second Clerk in Receiver-General's Office	1,800
Wickham Lieut. H. I., Curate of St. Paul's	1,440
Williams, James, Clerk to Stipendiary Magistrate	1,200
Wright Rev. J., Aidwaster	1,000
Wyatt Rev. F. J., Rector of All Saints	2,400
Wright E. D., Clerk in Post Office	1,200
Wright T. G., Assistant Crown Surveyor, exclusive of fees	1,500
Winter Alex., Harbour-Master, Barbice Patent Office fees	
Williams G. T., 2nd Clerk Penal Settlement	700
Watkins, Dr., Surgeon Lunatic Asylum, New-Amsterdam, Barbice	2,400
Yewens, E. G., Clerk to Stipendiary Magistrate	1,440

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